



MINISTRY OF WATER AND ENVIRONMENT

CIVIL WORKS FOR OFF-FARM IRRIGATION INFRASTRUCTURE AND FACILITIES

Volume 3: Bills of Quantities

Proc	c. Ref. No.: MW	E/WRKS/24-25/	/2
LOT 2	WESTERN AND	CENTRAL LOWER I	REGIONS

Issued on:January 2025

GRAND SUMMARY

Bill/	December:			A a
Scheme	Description			Amount (UGx.)
No.				
	OFNEDAL			
- DO	GENERAL	0 111		
PG	Preliminaries and			
GI.1	Method Related C	narges		
DW	Dayworks			
		UB TOTAL 1		
	WORK ITEMS	OB TOTAL T		
	Scheme Name	District	Region	
1.1	Bugogo	Kyegegwa	West	
1.2	Kisigare	Kagadi	Central	
1.3	Kitaihuka	Kakumiro	Central	
1.4	Bukuya	Kasanda	Central	
1.5	Bucuuhya	Kibale	Central	
1.6	Kyomya	Kiboga	Central	
1.7	Lubiri	Kyankwanzi	Central	
2.1	Kakunyu	Kyotera	West	
2.2	Kabusa	Rakai	West	
2.3	Ndibulungi	Butambala	Central	
2.4	Lwabenge	Kalungu	Central	
2.5	Bugere	Masaka	Central	
2.6	Kyomya	Mpigi	Central	
2.7	Nalyamagonja	Kalangala	Central	
2.8	Gayaza	Bukomansimbi	Central	
2.9	Kyawamala	Bukomansimbi	Central	
3.1	Kikutsi	Isingiro	West	
3.2	Kikatsi	Kiruhura	West	
3.4	Mirama	Ntungamo	West	
3.3	Rwentamu	Lyantonde	West	
3.5	Kanyogoga	Sembabule	West	
3.6	Rurama	Sheema	West	

GRAND SUMMARY

	GRAND SUMMARY						
Bill/							
Scheme	Description			Amount (UGx.)			
No.							
4.1	Kabumba	Kabale	West				
4.2	Nyaruhungye	Kanungu	West				
4.3	Bugara	Kisoro	West				
4.4	Kyondo	Rukiga	West				
4.5	Runkonkoma	Rukungiri	West				
4.6	Nyamasizi	Rubanda	West				
5.1	Kyakuhanda	Buhweju	West				
5.2	Kanyamukale	Bunyangabu	West				
5.3	Kashozi	Bushenyi	West				
5.4	Rwanshetsya	Bushenyi	West				
5.5	Karuhusi	Ibanda	West				
5.6	Nyacwamba	Kamwenge	West				
5.7	Rwenkurijo	Mitooma	West				
5.8	Katonya	Rubirizi	West				
	,	SUB TOTAL 2					
		UB TOTAL 1 + 2					
	Add	10% Contigencies					
		SUB TOTAL 3					
		Add 18% VAT					
	GRAND TO	TAL Carried to Bid Fo	rm				

BILL No. PG: PRELIMINARIES AND GENERAL ITEMS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
1.0	Contractual Requirement				
1.1	Performance Security PCC 49.1	Sum	1		
1.2	Advance Payment Guarantee - PCC 48.1	Sum	1		
1.3	Insurance of the Works - GCC 13	Sum	1		
2.0	Testing of Materials and Works				
2.1	Concrete cube tests as ordered by the Engineer; 4 No. per Scheme.	Nr	144		
2.2	Pressure testing & sterilisation of main lines	km	36		
2.3	Witness testing for Solar power systems	P.S	1	90,000,000	
2.4	Contractor's handling charge on all provisional sums under 2.3 above.	%	10		
3.0	Temporary works				
3.1	Provide, erect and maintain during the construction period 2No. sign boards per scheme at locations shown by the Engineer and in accordance with the Drawings and Specifications.	Nr	72		
3.2	De-watering; Allow for work in water affected areas, including all temporary works, pumping, protection, access, etc to ensure the works are completed as specified; include removal of facilities.	Sum	1		
3.3	Control and diversion of water from site and work areas to ensure the works are completed as specified. Rate to include removal of all temporary facilities and construction.	Sum	1		
3.4	Set up container converted to temprary office (20ft long by 8ft wide by 8ft 6 inch high) and with windows and doors, well maintained communication systems i.e. mobile, wireless internet etc. as directed and to the satisfaction of the Engineer.	Sum	1		
4.0	Provisional Sums				
4.1	Provision Sum for Client's administration and Supervision expenses				
	a) Western Region	month	24	8,500,000	
	b) Central Lower Region	month	24	4,200,000	
4.2	Allow for Site Handover / Project Launch.	P.S	36	2,100,000	
4.3	Allow for Technical Commissioningat Completion.	P.S	36	2,100,000	
4.4	Resident Supervision vehicle running costs				
•	a) Western Region	P.S	24	4,200,000	
	b) Central Lower Region	P.S	24	2,100,000	
A F	Contractor's handling charge on all provisional sums under 4.1a, 4.1b, 4.2,	%	10	_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
4.5	4.3, 4.4a, & 4.4b above				
otal Car	ried to Collection				
	No. PG Carried to Summary				

BILL No. GI.1: METHOD RELATED CHARGES

Method-Related Charges Other applicable Method-related Charges, if any, may be inserted by the Bidder. Fixed charge items 1.1 Mobilisation on site 1.2 Demobilise on completion of the Works 1.3 Supply and/or erect Contractor's site offices. 1.4 Remove Contractor's site offices on completion of the Works 1.5 Time related charge items Other applicable Time-Related Charges, if any, may be inserted by the Bidder. 1.6 Maintain Contractor's site offices, including all services Contractors Superintendance of Works 1.7 Maintain Contractor's site offices, including all services Contractors Superintendance of Works 1.8 Method-Related Charges, if any, may be inserted by the Bidder. 1.9 Maintain Contractor's site offices, including all services Contractors Superintendance of Works 1.9 Method-Related Charges, if any, may be inserted by the Bidder. 1.0 Maintain Contractor's site offices, including all services Contractors Superintendance of Works
the Bidder. Fixed charge items 1.1 Mobilisation on site sum 1 1.2 Demobilise on completion of the Works sum 1 1.3 Supply and/or erect Contractor's site offices. sum 1 1.4 Remove Contractor's site offices on completion of the Works sum 1 Time related charge items Other applicable Time-Related Charges, if any, may be inserted by the Bidder. 2.1 Maintain Contractor's site offices, including all services month 24
1.1 Mobilisation on site 1.2 Demobilise on completion of the Works 1.3 Supply and/or erect Contractor's site offices. 1.4 Remove Contractor's site offices on completion of the Works Time related charge items Other applicable Time-Related Charges, if any, may be inserted by the Bidder. 2.1 Maintain Contractor's site offices, including all services month 24
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2.2 Contractor Caponitalidado di Works
Total Bill No. Gl. 1 Carried to Summary

BILL No. DW: DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Personnel				
DW1	Working ganger	hr	10		
DW2	Artisan	hr	10		
DW3	Semi-skilled	hr	10		
DW4	Unskilled	hr	100		
DW5	Driver for light vehicle	hr	7		
DW6	Driver for heavy vehicle	hr	10		
DW7	Operator for heavy equipment	hr	10		
DW8	Materials Ordinary Portland Cement in 50 kg bags	t	1		
DW9	Coarse aggregate for concrete.	m³	1		
DW10	Fine aggregate for concrete.	m³	0.5		
DW11	Water for concrete	litres	10		
DW12	Sand for building	m³	0.5		
DW13	Sand for plaster	m³	0.5		
DW14	Fired Clay bricks for building.	nr	5,000		
DW15	Concrete blocks for building, 225mm for building,150mm thick	m²	0.5		
DW16	Concrete blocks for building, 225mm for building, 200 mm thick.	m²	0.5		
DW17	Hydrated lime for building 150 mm thick.	kg	1		
DW18	Timber, sawn.	m³	0.5		
DW19	Timber wrot.	m³	0.5		
	High yield steel reinforcement:-				
DW20	8-10 mm dia	kg	2,000		
DW21	12-16 mm dia.	kg	1,000		
DW22	Steel reinforcement fabric reference: A252	m²	5		
DW23	Hardcore filling	m³	10		
DW24	Topsoil delivered to site and spread	m³	50		
	Total Carried to Collection	<u> </u>			

BILL No. DW: DAY WORKS

BILL NO. D	CONTRACTOR'S EQUIPMENT			
DW25	Road vehicles:Pick-up,1 1/2t.	hr	5	
	Road vehicles: Lorries:			
DW26	Flat-5t capacity	hr	4	
DW27	Flat-10t capacity	hr	4	
	Tipping:			
G-1.21.28	5t capacity	hr	5	
G-1.21.29	10t capacity	hr	5	
	Water tankers with pump and hoses:			
DW30	5,000 Litre capacity.	hr	10	
	Excavator, face shovel or dragline:			
DW31	0.25 m ³ bucket.	hr	10	
DW32	0.5m ³ bucket.	hr	10	
DW33	1.0m³ bucket.	hr	10	
	Super long reach boom Excavator:			
DW34	0.25 m ³ bucket.	hr	10	
DW35	0.5m ³ bucket.	hr	10	
DW36	1.0m³ bucket.	hr	10	
	<u>Tractors:</u>			
DW37	Rubber tyred with trailer, 75 kw.	hr	10	
	Tracked including bull and angle dozer with ripper:			
	(i) 150 kw.	hr	10	
	(ii) 200 kw	hr	10	
	(iii) 250 kw.	hr	10	
	Rollers:			
DW38	Manual, 250 kg	hr	10	
DW39	vibratory, self, propelled, 1500 kg.	hr	10	
	Total Carried to Collection			

BILL No. DW: DAY WORKS

	Concrete mixers with weigh batchers and loading hoppers:				
DW40	300 litre capacity.	hr	20		
DW41	400 litre capacity.	hr	20		
	Concrete vibrator, pneumatic with hoses:				
DW42	poker type, 50 mm	hr	10		
	Air compressor, mobile with 5m of hose and steels with:				
DW43	1 breaker.	hr	10		
DW44	2 breakers.	hr	10		
	Mobile electricity generating sets, 240v, 1 ph, 50 Hz:				
DW45	5 kvA	hr	2		
DW46	10 kvA	hr	2		
	Dewatering Pumps with motor and 5m suction, 3m delivery hose				
DW47	Norminal size 50mm.	hr	20		
DW48	Nominal size 100mm.	hr	20		
	Mobile Cranes: including slings chains, dogs and nips				
DW49	5t capacity	hr	5		
				<u> </u>	
	Total Carried to Collection				
	COLLECTION				
	Page 1				
	-				
	Page 2				
	Page 3				
	Total Comind to Count Supression			1	
1	Total Carried to Grand Summary				

Region: West

Scheme ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT.

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: West

BULL N. 4	A DOTD A OTION	AND ELECTROME	OLIANIIOAL MOR	1/0	

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	BOREHOLE SITING, DRILLING AND TEST PUMPING				
2.1	Inception (Desk Studies), field reconnaissance surveys and siting of suitable borehole site within the <u>vicinity</u> of the <u>proposed water source</u> .	Item	1		
2.2	Mobilization and demobilization of personnel and equipment to and from site.	Item	1		
2.3	150mm borehole drilling and casing to depth not exceeding 180m, including 72-hour test pumping, recovery, construction of the well head structures and production of reports.	Item	1		
2.4	Allow for the supervision of items 2.1, 2.2 and 2.3 by the Ministry of Water and Environment, Ground Water Unit - WSDF-W.	Item	1		
4	Single layer of geotextile laid to manufaturer's specifications	m^2	56.5		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m² at Intake Site and 800m² at Pump Station.	m ²	1,050		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 22 m^3 /hr., rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		

Scheme ID 11: BUGOGO IN KYEGEGWA DISTRICT

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		

Total Carried to Collection

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		, ,
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Total Carried to Collection				

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	
ltem No.	Description			Amoun (UGx.)
	<u>Gates</u>			
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2	
	Training of Operator's staff			
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1	
	Operation and Maintenance Manuals			
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1	
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only	
	Total Carried to Collection	l		
BILL N	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			Amoun
No.	Description			(UGx.)
	Bill No. 1 Collection			
	Page 2			
	Page 3			
	Page 4			
	Page 5			
	Total Bill No. 1 Carried to Bill Summary	•		

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches:	m	Rate Only		
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
3.1	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	280		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
	Total Carried to Collection				

heme ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. ILL No. 2 : TRANSMISSION MAINS		Region:	West	
em Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8 Valves and Penstocks				,
Air Valves				
Flanged CI double orifice air relief valve, DN50mm, as specified				
flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
flange adaptors, distance pieces, and all fittings necessary to make				
the installation on pipes of the following sizes, all to PN10, include				
chamber as specified.				
3.1 DN65mm	No.	1		
9 Washouts				
Washout as specified in the drawings, complete with plastic				
compression pipe fittings; tee, drainage pipes, union ball valve, flap				
valve, stone masonry outfall structure and all other fittings necessary to				
make the complete installation on pipes of the following sizes; all to				
PN10 including valve surface box to detail.				
9.1 DN65mm	No.	1		
PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
Other Chambers				
Masonry air valve chamber, complete as specified in the drawings, and				
of the following depths				
0.1 Depth not exceeding 1.5m	No.	1		
Valve Surface Boxes				
Valve surface box for DN100 - DN300 valves, with lockable cover				
securely attached to main body of surface box by chain or bolt, include				
down pipe, complete as specified and to the following depths				
0.2 Depth not exceeding 1.5m	No.	1		
Reinstatement				
Roads				
Breaking up, temporary and permanent reinstatement of gravel roads_				
for the following pipe sizes				
11 Not exceeding DN300mm	m	12		
The shooding Differential				

		Region:	West	
Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Surrounds				, ,
Pipe surrounds, of selected excavated granular material, for the				
following pipe sizes				
Not exceeding DN200mm	m	30		
Pipe surrounds, of imported granular material, for the following pipe				
sizes				
Not exceeding DN200mm	m	40		
Pipe surrounds, of mass concrete, for the following pipe sizes				
Not exceeding DN200mm	m	24		
Concrete Stools and Thrust Blocks				
Thrust Blocks				
Diameter not exceeding DN200mm	No.	Rate Only		
Other Pipework Ancillaries				
Marker Posts				
Marker posts for pipes, gate valves, air valves, washouts	nr	18		
Total Carried to Collection				
Bill No. 2 Collection				
Page 6				
Page 7				
Page 8				
Total Bill No. 2 Carried to Bill Summary	<u> </u>	1		
	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm Concrete Stools and Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Page 6 Page 7 Page 8	Description Linit Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm M Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Page 6 Page 7 Page 8	Description Unit Qty. Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm m 30 Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm m 40 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 40 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 24 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. Rate Only Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 18 Total Carried to Collection Page 6 Page 7 Page 8	Description Unit Qty. Rate (UGx.) Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm m 30 Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm m 40 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 24 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m², for the following pipe sizes Diameter not exceeding DN200mm No. Rate Only Other Pipework Ancillaries Marker Posts Marker Posts Marker Posts for pipes, gate valves, air valves, washouts nr 18 Total Carried to Collection Page 6 Page 7 Page 8

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT.		Region:	West	
Item No.	lo. 4.3 : STORAGE RESERVOIR WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				()
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
•	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring:-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :- [OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
J. I		INU.	'		
	Total Carried to Collection		•		

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		,
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m ³	2		
DII I N	Total Carried to Collection Io. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amoun (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 1.1: BUGOGO IN KYEGEGWA DISTRICT.		Region:	West	
Item No.	lo.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	DEMOLITION AND SITE CLEARANCE General Site Clearance				(00x.)
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
2.1	OD63mm PN10	m	182		
2.2	OD75mm PN10	m	103		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	2		
	Unequal tees				
3.8	OD75 x 63mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers		D . O .		
4.1	OD90mm OD75mm	No.	Rate Only Rate Only		
4.2 4.3	OD63mm	No. No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	4		
	Total Carried to Collection				

	PID. 1.1: BUGOGO IN KYEGEGWA DISTRICT. 0.4 : DISTRIBUTION NETWORK		Region:	West	
tem	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valves and Penstocks				, ,
4	Air Vaves				
<u> </u>	Flanged CI double orifice air relief valve, DN50mm, as specified				
2	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
1	flange adaptors, distance pieces, and all fittings necessary to make				
1	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
,	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
1	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
11-	Drawing No. OIS/NUC/SD/004.				
	DN65mm	No.	4		
 	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - DN50mm	No.	4		
0.1	DNOOHIIII	INO.	4		
1-	Other Pipework Ancillaries Marker Posts				
	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	24		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary		<u> </u>	1	

Region:

Central

Scheme ID. 1.2: KISIGARE IN KAGADI DISTRICT

BILL SUMMARY

	BIII Decement (ICV)						
No.	Description	Amount (UGx.)					
	WORK ITEMS						
1	Abstraction and Electromechanical Works						
2	Transmission Mains						
3	Storage Reservoir Works						
4	Distribution Network						
	Total Carried to Grand Summary						

Scheme ID. 1.2: KISIGARE IN KAGADI DISTRICT

Region:	Central
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tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	76		
2.5	Soft / decomposed rock soils	m ³	19		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: Lot 2 - WESTERN & CENTRAL LOWER REGIONS Scheme ID. 1.2: KISIGARE IN KAGADI DISTRICT

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT	Region:		Central	
BILL N	lo.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	, ,			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping	2	40		
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Total Carried to Collection				

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT IO.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	Region:		Central	
em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bellmouths				, ,
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
4.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
4.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	$3.0\ x\ 1.5$ top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		

Scheme ID. 1.2: KISIGARE IN KAGADI DISTRICT

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
ME1	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 100m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

LOWER REGIONS					
	e ID. 1.2: KISIGARE IN KAGADI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	Region:		Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16		Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		

Total Carried to Collection

DILL I	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1			
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amoun (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
K6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description				Amoun (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

Total Bill No. 1 Carried to Bill Summary

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT	Region:		Central	
ILL N tem No.	No. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;		40		
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	250		
4	uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
1.1	OD110 to PN 10 Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
5.1	following main pipe sizes DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		

Total Carried to Collection

Scheme ID. 1.2: KISIGARE IN KAGADI DISTRICT

Region: C	entral
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ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				, ,
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
	down pipe, complete as specified and to the following deptils				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	10		
	, and the second		-		

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT Io. 2 : TRANSMISSION MAINS	Region:		Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				, ,
12.2	sizes Not exceeding DN200mm	m	20		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	10		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
13	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	12		
	Total Carried to Collection	<u> </u>		I	
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	<u> </u>			
	Total Bill No. 2 Carried to Bill Guillillary				

excavated topsoil and preparation of surfaces.

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS	Region:		Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				. ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
2.1	Height; 1.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring:-				
4.2	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with	m^2	150		

Total Carried to Collection

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT Io. 3 : STORAGE RESERVOIR WORKS	Region	:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.1	$500 \times 500 \times 50$ mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		,
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT Io.4 : DISTRIBUTION NETWORK	Region:		Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(/
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	200		
2.2	OD75mm PN10	m	60		
2.3	OD90mm PN10	m	110		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.2	OD90mm	No.	1		
3.4	OD63mm	No.	3		
	Unequal tees				
3.6	OD90 x 75mm	No.	2		
3.7 3.8	OD90 x 63mm OD75 x 63mm	No. No.	1 3		
ა.0	IOD75 X 63HHI	INO.	S		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		

5

5.1

End caps

OD63mm

Total Carried to Collection

No.

4

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: Lot 2 - WESTERN & CENTRAL LOWER REGIONS Scheme ID. 1.2: KISIGARE IN KAGADI DISTRICT

	e ID. 1.2: KISIGARE IN KAGADI DISTRICT	Region:		Central	
BILL N Item	Io.4 : DISTRIBUTION NETWORK				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN75mm	No.	1		
8	Farm Gate Connections				
Ü	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
	10 FN 10				
8.1	DN50mm	No.	4		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary	<u> </u>			

Region: Central

Scheme ID. 1.3: KITAIHUKA IN KAKUMIRO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: Central

Scheme ID. 1.3: KITAIHUKA IN KAKUMIRO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	60		
2.5	Soft / decomposed rock soils	m^3	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths				
	as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		
	Total Carried to Collection				

Region: Central

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		- 9		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
DILL	Total Carried to Collection Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		

Schem	e ID. 1.3: KITAIHUKA IN KAKUMIRO DISTRICT	1	Region:	Central	i
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
12	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
13	MISCELLANEOUS WORK Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1 14.2	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings. Galvanized iron Fine Trash Screen as detailed in the drawings.	No. No.	1 1		
	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
16	Stone pitched Channel. 3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

Schem	e ID. 1.3: KITAIHUKA IN KAKUMIRO DISTRICT		Region:	Central	
	ELECTRO-MECHANICAL WORKS				
ME1	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 7.5kW Submersible Pump Set with 11.05kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 75m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
	Total Carried to Collection				

Region: Central

BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150				
/IE10a	6mm² UV Single Cable.	m	60				
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2				
/IE11a	Adapter box	No.	1				
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1				
	Earthing and Lightening Protection						
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1				
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1				
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5				
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1				
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1				
X1	MISCELLANEOUS WORKS Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a	No.		1	1		

Region: Central

Item	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Kerbs				,
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge 10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval.	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval.	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>		

	e ID. 1.3: KITAIHUKA IN KAKUMIRO DISTRICT o.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
		1	1	1	

Region: Central

	o. 2 : TRANSMISSION MAINS	1	1		T
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.6	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN10	m	420		
4 4.1	uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN75mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN75mm PN10	No.	1		
	Total Carried to Collection				

Region: Central

BILL N	Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				, ,
7	Equal Adapters		_		
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
U	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
0.1	PN10 including valve surface box to detail.	No	1		
9.1	DN75mm	No.	'		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Total Carried to Collection				

Region: Central

BILL N	Io. 2 : TRANSMISSION MAINS		J. J		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	30		
	Discourse de la faction de la				
10.0	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm		0		
12.3	INOU exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Reinforced concrete pipe supports, complete including foundation				
	bases, straps and bolting, for DN100 - 150 mm pipe to the following				
	heights				
15.1	Height not exceeding 1 m		22		
15.2	Height 1 - 1.5 m		8		
	Total Carried to Collection				
BILL N	Io. 2 : TRANSMISSION MAINS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	Dill No. 2 Callestion				
	Bill No. 2 Collection				
	Page 9				
	Page 10				
	Page 11				
	T-4-IP#N 00 1 1/ P#0				
	Total Bill No. 2 Carried to Bill Summary				

Region: Central

	o. 4.3 : STORAGE RESERVOIR WORKS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities. Height; 4.5m for (4No. x 10m³ Tanks)	No.	1		
	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.	No.			
3.1	10m ³ 150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI	No.	4		
4.1	pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
	Total Carried to Collection				

Region: Central

BILL N	lo. 3 : STORAGE RESERVOIR WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection	<u> </u>			
	o. 3 : STORAGE RESERVOIR WORKS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Dill No. 2 Comiced to Dill Comment				
	Total Bill No. 3 Carried to Bill Summary				

Region: Central

BILL N	Io.4 : DISTRIBUTION NETWORK						
Item	Description	Unit	Qty.	Rate (UGx.)	Amount		
	DEMOLITION AND SITE CLEARANCE						
	General Site Clearance						
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1				
	route, including felling trees, grabing tree stumps and disposal of						
	arising materials.						
	PIPEWORK-PIPES						
2	Plastic Pressure Pipes- Distribution						
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in						
	trench to the following depths not exceeding 1.5m						
2.1	OD63mm PN10	m	278				
2.2	OD75mm PN10	m	100				
2.3	OD90mm PN10	m	142				
	PIPEWORK - FITTINGS AND VALVES						
	DIVIDED OF THE STATE OF THE STA						
	PN10 HDPE Compression fitting to DIN 8074/BS 5114						
	Plastic Pipe Fittings						
3	Equal tees						
3.1	OD90mm	No.	Rate Only				
3.2	OD75mm	No.	1				
3.3	OD63mm	No.	3				
0.0		110.					
	Unequal tees						
3.4	OD90 x 75mm	No.	2				
3.5	OD90 x 63mm	No.	2				
3.6	OD75 x 63mm	No.	8				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114						
	Plastic Pipe Fittings						
4	Couplers						
4.1	OD90mm	No.	Rate Only				
4.2	OD75mm	No.	Rate Only				
4.3	OD63mm	No.	Rate Only				
	Total Carried to Collection	<u> </u>	<u> </u>				
Total Carried to Collection							

Region: Central

Description	to make the lo, include chamber	No.	Qty. 8 Rate Only Rate Only	Rate (UGx.)	Amount (UGx.)
 OD63mm Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, a to ISO 2441, complete with isolating gate valve to IS adaptors, distance pieces, and all fittings necessary installation on pipes of the following sizes, all to PN1 as specified. OD90mm OD75mm Washouts Washout as specified in the drawings, complete with 	to make the lo, include chamber	No.	Rate Only		
6 Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, a to ISO 2441, complete with isolating gate valve to IS adaptors, distance pieces, and all fittings necessary installation on pipes of the following sizes, all to PN1 as specified. 6.1 OD90mm 6.2 OD75mm 7 Washouts Washout as specified in the drawings, complete with	to make the lo, include chamber	No.	Rate Only		
Air Vaves Flanged CI double orifice air relief valve, DN50mm, at to ISO 2441, complete with isolating gate valve to IS adaptors, distance pieces, and all fittings necessary installation on pipes of the following sizes, all to PN1 as specified. 6.1 OD90mm 6.2 OD75mm 7 Washouts Washout as specified in the drawings, complete with	to make the lo, include chamber		-		
Flanged CI double orifice air relief valve, DN50mm, a to ISO 2441, complete with isolating gate valve to IS adaptors, distance pieces, and all fittings necessary installation on pipes of the following sizes, all to PN1 as specified. OD90mm OD75mm Washouts Washout as specified in the drawings, complete with	to make the lo, include chamber		-		
to ISO 2441, complete with isolating gate valve to IS adaptors, distance pieces, and all fittings necessary installation on pipes of the following sizes, all to PN1 as specified. OD90mm OD75mm Washouts Washout as specified in the drawings, complete with	to make the lo, include chamber		-		
adaptors, distance pieces, and all fittings necessary installation on pipes of the following sizes, all to PN1 as specified. 6.1 OD90mm 6.2 OD75mm 7 Washouts Washout as specified in the drawings, complete with	to make the 10, include chamber		-		
installation on pipes of the following sizes, all to PN1 as specified. 6.1 OD90mm 6.2 OD75mm 7 Washouts Washout as specified in the drawings, complete with	0, include chamber		-		
as specified. OD90mm OD75mm Washouts Washout as specified in the drawings, complete with			-		
as specified. OD90mm OD75mm Washouts Washout as specified in the drawings, complete with			-		
 6.1 OD90mm 6.2 OD75mm 7 Washouts Washout as specified in the drawings, complete with 	n plastic		-		
 6.2 OD75mm 7 Washouts Washout as specified in the drawings, complete with 	n plastic		Rate Only		
7 Washouts Washout as specified in the drawings, complete with	n plastic				
Washout as specified in the drawings, complete with	n plastic				
	n plastic				
compression pipe fittings; tee, drainage pipes, PVC					
	union ball valve,				
flap valve and all other fittings necessary to make the	e complete				
installation on pipes of the following sizes; all to PN1	10 including valve				
surface box and stone masonry outfall structure to de	etail as per Drawing				
No. OIS/NUC/SD/004.	,				
7.1 DN75mm		No.	1		
7.2 DN50mm		No.	1		
8 Farm Gate Connections					
Make DN50mm Irrigation Water Supply Hydrant cor	nnection to the				
distribution main, inclusive of PVC compressive bal					
complete with connector pipes and locakable chamb	•				
Drawing No. OIS/NUC/SD/008, for the following mai					
	ns sizes and all to				
PN10: - 8.1 DN50mm		Na	0		
8.1 DN50mm		No.	8		
Other Pipework Ancillaries					
Marker Posts					
9 Marker posts for pipes, gate valves, air valves, washo	outs	nr	22		
Deinstatement					
Reinstatement					
Roads					
Breaking up, temporary and permanent reinstatemen	nt of gravel roads				
for the following pipe sizes			40		
10 Not exceeding DN200mm Total Carried to		m	12		

Schem	ne ID. 1.3: KITAIHUKA IN KAKUMIRO DISTRICT	Region:	Central	
	Bill No. 4 Collection			
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	Total Bill No. 4 Carried to Bill Summary			

Region: Central

Scheme ID. 1.4: BUKUYA IN KASANDA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism silt basin and reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	1555		
2.2	Soft / decomposed rock soils	m ³	30		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 3.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	150		
2.5	Soft / decomposed rock soils	m ³	6		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces;	m ²	2,725		
	Total Carried to Collection				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: Lot 2 - WESTERN & CENTRAL LOWER REGIONS Scheme ID. 1.4: BUKUYA IN KASANDA DISTRICT

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT		Region:	Central			
BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
	ELECTRO-MECHANICAL WORKS						
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)						
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1				
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1				
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1				
ME4	PV Disconnect 1000-40-2	No.	1				
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1				
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1				
ME7	PV Combiner	No.	1				
ME7a	Pressure Switch and Gauge - P5/8	No.	1				
ME8	Sinewave filter - SWAP0017D.	No.	1				
ME9	10mm ² Borehole drop cable,	m	5				
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100				
ME10a	6mm² UV Single Cable.	m	60				
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2				
ME11a	Adapter box	No.	1				
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1				
	Total Carried to Collection		•				

	10.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
/IE14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	130		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Gates				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Stone Pitching.				
XXX	250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m ²	125		
	Total Carried to Collection				
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
3.1	trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	646		
3.1		m	040		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10		Data Only		
4.1	Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.3	DN65mm	No.	4		
6	Bulk Flow Meters				
Ü	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.3	DN65mm PN10	No.	1		
			1		

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
0.1	DI TOOMINI	140.	'		
9	Washouts				
J	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
10.1	Deput not exceeding 1.5m	INO.	'		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN200mm	m	12		
	Total Carried to Collection		. '-	1	

Region: Central

	IO. 2 : TRANSMISSION MAINS		Region:	Gential	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.1	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	25		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	15		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	18		
	Total Carried to Collection				
	Io. 2 : TRANSMISSION MAINS		Τ		A a
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary		<u> </u>		

Region: Central

	lo. 4.3 : STORAGE RESERVOIR WORKS		Region:	Ochilai	
	Description	Unit	Qty.	Rate (UGx.)	Amount
	DEMOLITION AND SITE CLEARANCE		4.9	(
	General Site Clearance				
4	General site slearance including trees, stumps and disposal of arising	Item	1		
1	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
0.4	2		4		
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
J. I	Turn	NO.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring:-				
4.2	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
	Total Carried to Collection			<u> </u>	
	lotal Carried to Collection				

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				` '
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
	following grades:	,			
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	lo. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary		<u> </u>		

	e ID. 1.4: BUKUYA IN KASANDA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	134		
2.2	OD75mm PN10	m	230		
2.3	OD90mm PN10	m	245		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	4		
3.2	OD75mm	No.	1		
3.3	OD63mm	No.	2		
	Unequal tees				
3.4	OD90 x 63mm	No.	1		
3.5	OD750 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	4		
	Total Carried to Collection	<u> </u>	<u> </u>	1	

	lower regions le ID. 1.4: BUKUYA IN KASANDA DISTRICT lo.4: DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	1		
6.2	OD63mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	Rate Only		
7.2	DN50mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Total Carried to Collection		<u> </u>		
	Bill No. 4 Collection				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 1.5: BUCHUYA IN KIBALE DISTRICT

BILL SUMMARY

BILL SUMMARY BIII Description						
No.	Description	Amount (UGx.)				
	WORK ITEMS					
1	Abstraction and Electromechanical Works					
2	Transmission Mains					
3	Storage Reservoir Works					
4	Distribution Network					
	Total Carried to Grand Summary					

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT		Region:	Central	
	No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amarint
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of	Item	1		
	topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake				
	Works, Pump House and Solar Array Sites including stockpiling of topsoil for				
	reuse and disposing off resultant materials as directed by the Engineer.				
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction	m^3	57		
2.1	structure in normal ground, depth not exceeding 5.0m including disposal and	m°	37		
	spreading of excavated material to fair profiles on site as directed by the				
	Engineer and preparation of excavated surfeces to receive hardcore fill.				
2.2	Ditto but for the Intake Structure	m ³	34		
2.3	Excavation to form trapezoidal drain in marshy soils, depth not exceeding	m^3	175		
	5.0m including disposal and spreading of excavated material to fair profiles				
	on site as directed by the Engineer and preparation of excavated surfaces to				
	slopes as indicated on the drawings.				
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
	as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by	m ³	12		
J. I	Ithe arm of an excavator.	III	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufaturer's specifications	m ²	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated	m^2	840		
	topsoil and the preparation of surfaces; 40m ² at Intake Site and 800m ² at				
	Pump Station.				
	Total Carried to Collection				

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				, ,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
6.1	Blinding 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1.1		
	Grade C25/10				
6.2	Reinforced Concrete Base Slabs, Toe and Heel 200mm thick toe.	3	0.3		
0.2	200mm thick toe.	m ³	0.3		
6.3	200mm thick base slab.	m ³	2.4		
6.4	350/ 200mm thick reaining wall/ weir stem.	m ³	0		
6.5	200mm thick sump walls.	m ³	13.5		
6.6	200mm thick top slab.	m ³	1.2		
	Formwork Formwork-Fair Finish				
	FOITIWOIN-FAII FIIIISII				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	140		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m^2	11		

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				,
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	1.2		
	Inserts				
8.2	DN 250 CL/CT flowered modelled wine income since the manifestion from how	No.	Rate Only		
	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.				
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-				
9.5	150 mm ND	No.	Rate Only		
	135 1. <u>2</u>		,		
	Total Carried to Collection				

Description Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: - 300mm wide x 1000mm high. MISCELLANEOUS METAL WORK	Unit No.	Qty.	Rate (UGx.)	Amount (UGx.)
specified in drawings of the following size: - 300mm wide x 1000mm high.	No.	1		
300mm wide x 1000mm high.	No.	1		
•	No.	1		
MISCELLANEOUS METAL WORK		'		
Ladders				
External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
Access Manhole Cover				
500 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
Valve Surface Boxes				
Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
ELECTRO-MECHANICAL WORKS				
Solar Pumping System (based on 550Wp panels; bidder to adjust numbers o match rating of panel offered)				
11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 100m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump	No.	1		
2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
PV Disconnect 1000-40-5	No.	1		
Cu A Ga V V Sa E SEC 1 V T 2 S V Sda	complete andas shown in the drawings including fixing to precast concrete inits Access Manhole Cover 100 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement. Aclive Surface Boxes (Valve surface box with lockable cover securely attached to main body of curface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m. ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 1.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 100m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump 1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring. Mild steel welded structure for holding solar PV panels at 15° tilt angle and uitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per larwings, including foundations, vandal proofing mounting to the Engineer's approval	complete andas shown in the drawings including fixing to precast concrete inits Access Manhole Cover 100 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement. Aclive Surface Boxes Aleve Surface Boxes Aleve surface box with lockable cover securely attached to main body of ourface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m. ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers of match rating of panel offered) 1.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 100m total head; set to not note than 5m below ground including Dry- run protection, Motor and Pump over the pump system complete including wiring. Access Manhole Cover No.	Access Manhole Cover 100 x 600mm clear opening painted mild steel cover and frame include fixing not indicking arrangement. No. 2 Access Manhole Cover 100 x 600mm clear opening painted mild steel cover and frame include fixing not indicking arrangement. No. 2 Access Manhole Cover 100 x 600mm clear opening painted mild steel cover and frame include fixing not include locking arrangement. No. 2 Access Manhole Cover 100 x 600mm clear opening painted mild steel cover and frame include fixing not include fixing not include down pipe, complete as specified and to include the down pipe, complete as specified and to include the down pipe, complete as specified and to include the down pipe, complete as specified and to include the pump include the pump system complete painted including Dry- run protection, Motor and Pump not including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry- run protection, Motor and Pump included painted including Dry-	complete andas shown in the drawings including fixing to precast concrete inits Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing ind locking arrangement. Aclive Surface Boxes Alave surface box with lockable cover securely attached to main body of urface box by chain or bolt, include down pipe, complete as specified and to indepth not exceeding 4.5 m. ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers or match rating of panel offered) 1.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 100m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump 1. Ext7No. x 550Wp panels solar array to provide 18.7kW power to the pump ystem complete including wiring. Item 1 Sum 1 Whild steel welded structure for holding solar PV panels at 15° tilt angle and uitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per Irawings, including foundations, vandal proofing mounting to the Engineer's approval

Scheme ID. 1.5: BUCHUYA IN KIBALE DISTRICT BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	: Central		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME4	PV Disconnect 1000-40-2	No.	1		\
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
1E10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
/IE11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		

Description E17 GMS Alarm System complete with for the pump protection as instructed MISCELLANEOUS WORKS Pump Protection System	1No. alarm horn and 1No.vibration sensor ed by the Engineer.	Unit	Qty. 1	Rate (UGx.)	Amount (UGx.)
for the pump protection as instructe		Item	1		
Pump Protection System					
floating suction assembly structure	ti-vandal protection sleeve including a to detail as per Drawing No. cluding 1.5x1.5x0.3m support base.	No.	1		
Kerbs					
Pre-cast concrete kerbs to BS 7263 following alignment: -	3 of cross section area 0.05-0.1 m² to the				
X2 Straight or curved to a radius exce	eding 12 m	m	70		
X3 75mm thick of 12 - 25mm size mac Solar Array laid onto a guage 500	chine crushed aggregate cover under the polythene sheet.	m²	220		
X4 450mm diameter reinforced concre	ete pipe/ culvert	m	0		
Pump House					
X5 Construct a 12.0m superficial area No.OIS/NUC/PH/001.	Pump House to detail as per Drawing	Sum	1		
<u>Fences</u>					
	nk fence to BS 1722:2019 with triple raw of at the Intake Site, including special ods" to the Engineer's approval.	m	80		
	nk fence to BS 1722:2019 with triple raw of	m	120		
barbed wire on top; height 2-2.5m a	at the Pumping Station Site.				
Gates	A for stools leaf and by 1999 1999		^		
X7 Metal field gate to BS 3470; width fence.	1.5m single leaf and height to match the	No.	2		

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 1 Carried to Bill Summary		<u> </u>		

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of arising materials.				
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.6	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
3.1	OD90mm HDPE PN10	m	640		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends				
ŭ	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	to PN 10, and of the following sizes DN75mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN65mm PN10	No.	1		
7	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters				
7.1	OD90 female adapter	No.	2		
	Total Carried to Collection		<u> </u>		

-	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				, ,
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection	<u> </u>	<u> </u>		

Scheme ID. 1.5: BUCHUYA IN KIBALE DISTRICT

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				,
	Pipe surrounds, of selected excavated granular material, for the				
40.4	following pipe sizes		00		
12.1	Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	50		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	20		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Total Carried to Collection				
BILL N	Io. 2 : TRANSMISSION MAINS			•	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 9				
	Page 10				
	Page 11				
	raye II				
	Total Bill No. 2 Carried to Bill Summary				

Scheme ID. 1.5: BUCHUYA IN KIBALE DISTRICT

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	Ocilliai	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				` '
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
	· · · · · · · · · · · · · · · · · · ·				
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring:-				
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

Scheme ID. 1.5: BUCHUYA IN KIBALE DISTRICT

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		, ,
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

Scheme ID. 1.5: BUCHUYA IN KIBALF DISTRICT

	e ID. 1.5: BUCHUYA IN KIBALE DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	Jenual .	
Item				_ , ,,,,,	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	30		
2.2	OD75mm PN10	m	470		
2.3	OD90mm PN10	m	96		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
3.3	Unequal tees OD75 x 63mm	Na	4		
3.4	OD75 x 63mm Bend	No. No.	1 1		
3.4	OD75 X 65mm Bend	INO.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers	NI-	Pate Only		
4.1	OD75mm	No. No.	Rate Only Rate Only		
4.2	OD63mm	INO.	Trate Only		
5	End caps				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	2		
	Total Carried to Collection		<u> </u>		

Scheme ID 15: BUCHUYA IN KIBALE DISTRICT

Description Unit Qty. Rate (UGx.) Amoun (UGx.)		e ID. 1.5: BUCHUYA IN KIBALE DISTRICT o.4: DISTRIBUTION NETWORK		Region:	20110.01	
No. Valves and Penstocks Air Vaves Flanged Cl double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. OD75mm	ltem				D ((110)	Amount
Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified flange so ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm 6.2 OD63mm No. 1 7 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm No. 2 DN50mm No. Rate Only Parm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts rotal Carried to Collection Bill No. 4 Collection Page 14	No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm 6.2 OD63mm No. 1 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. No. 2 No. 7.2 DN50mm No. 7.2 DN50mm No. 1 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14	6	Valves and Penstocks				,
flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm		Air Vaves				
flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm 6.2 OD63mm No.		Flanged CI double orifice air relief valve, DN50mm, as specified				
the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm 6.2 OD63mm No.		flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm No. D053mm No. 1 7 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm No. 2 No. Rate Only 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14		flange adaptors, distance pieces, and all fittings necessary to make				
6.1 OD75mm OD63mm No.		the installation on pipes of the following sizes, all to PN10, include				
6.2 OD63mm No. 1 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm No. 2 Parm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14		chamber as specified.				
Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm No. DN50mm No. Rate Only 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14	6.1	OD75mm	No.	Rate Only		
Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm No. Q2 No. Parm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14	6.2	OD63mm	No.	1		
compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm	7	Washouts				
compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm		Washout as specified in the drawings, complete with plastic				
flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1. DN65mm						
installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN65mm 7.2 DN50mm 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14						
Surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004.		•				
7.1. Drawing No. OIS/NUC/SD/004. 7.2 DN65mm DN50mm 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14						
7.1. DN65mm DN50mm Rate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14						
8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14			No.	2		
Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14	7.2	DN50mm	No.	Rate Only		
distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14	8	Farm Gate Connections				
distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14		Make DN50mm Irrigation Water Supply Hydrant connection to the				
cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 2 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14		* '' '				
on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14		·				
to PN10: - DN50mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14		, ,				
Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14						
Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection Page 14			No.	2		
9 Marker posts for pipes, gate valves, air valves, washouts nr 24 Total Carried to Collection Bill No. 4 Collection Page 14		Other Pipework Ancillaries				
Total Carried to Collection Bill No. 4 Collection Page 14						
Bill No. 4 Collection Page 14	9	Marker posts for pipes, gate valves, air valves, washouts	nr	24		
Bill No. 4 Collection Page 14		Total Carried to Collection				
Page 14						
		Bill No. 4 Collection				
Page 15		Page 14				
		Page 15				

Region: Central

Scheme ID. 1.6: KYOMYA IN KIBOGA DISTRICT

BILL SUMMARY

Bill No.	Description Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Tatal Osmiral to Osmard Osmara	
I	Total Carried to Grand Summary	

ltem	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount
No.	·	Unit	Qty.	Rate (UGX.)	(UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m^3	45		
2.3	Ditto but for the River Weir Structure	m^3	3.5		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore, hand packed or compacted by the arm of an excavator.	m^3	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
	Landscaping				
4	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m ²	840		
	Total Carried to Collection				

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				, ,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10 Blinding				
5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
5.2	200mm thick key and toe.	m ³	2.5		
5.3	200mm thick base and heel slabs.	m ³	5		
5.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19.0		
5.5	200mm thick sump walls.	m ³	41		
5.6	200mm thick top slab.	m ³	1.2		
	Formwork				
	Formwork-Fair Finish				
6.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.5		
	Fair Finish Plane Vertical				
6.2	Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
	Finishing of top surfaces				
6.3	Steel trowel finishing of top surfaces.	m ²	20		
	Total Carried to Collection				

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
7.1	Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK				
	Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729,	m	5		
	complete andas shown in the drawings including fixing to precast concrete				
	units				
	Pump Protection System				
8.2	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to	No.	Rate Only		
0.2	detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support	110.	,		
	base.				
	Access Manhala Cover				
0 2	Access Manhole Cover	No	2		
8.3	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	and looking arrangement.				
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers				
	to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data	No.	1		
	Module, rated flow Q = 15 m ³ /hr., rated head H = 75m total head; set to not				
	more than <u>5m</u> below ground including Dry- run protection, Motor and Pump				
	End.				
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump	Item	1		
	system complete including wiring.				
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and	Sum	1		
	suitable for a 21x17No. x 550Wp panels Solar Aarray in Item 2 above as per				
	drawings, including foundations, vandal proofing mounting to the Engineer's				
	approval				
ME4	PV Disconnect 1000-40-5	No.	1		
ME5	PV Protect 1000-125	No.	Rate Only		
	Total Carried to Collection		· ,	1	

Scheme ID. 1.6: KYOMYA IN KIBOGA DISTRICT BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PV Combiner	No.	1		\ /
ME7a	Pressure switch	No.	1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0012D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	Total Carried to Collection		<u> </u>		

BILL N	10.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors	Item	1		
IVIL 10	per array.	ILEIII	'		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Gates				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary		l		

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Contral	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
•••	211 Shift, in adhered, adpare not exceeding 1.5m		12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	644		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10				
1.1	Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters				
-	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
3.1	DN65mm PN10	No.	1		
		1			

	lo. 2 : TRANSMISSION MAINS		1	 	A mc = 4
em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
1	Flanged CI double orifice air relief valve, DN50mm, as specified	Na	1		
3.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
).1	PN10 including valve surface box to detail. DN65mm	No.	2		
7. 1	Direction	INO.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
0.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	36		
			I		

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				, ,
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	20		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	60		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	40		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	No.	20		
	STRUCTURAL METALWORK				
	Fabrication and erection of rolled steel section pipe bridge complete as				
	shown on drawings				
15.1	Span 3 - 5m at height not exceeding 2m.	No.	1		
15.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
	Total Carried to Collection				
		-			
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary		<u> </u>	1	

Item	Io. 4.3 : STORAGE RESERVOIR WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				\\-
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising	Item	1		
'	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection		1		

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
	lollowing grades.				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	lo. 3 : STORAGE RESERVOIR WORKS		1		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary		ı		

	e ID. 1.6: KYOMYA IN KIBOGA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	720		
2.2	OD75mm PN10	m	340		
2.3	OD90mm PN10	m	440		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	3		
3.2	OD75mm	No.	1		
	Unequal tees				
3.3	OD90 x 63mm	No.	2		
3.4	OD75 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	5		
	Total Carried to Collection				·

ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Description	Ullit	Qty.	Rate (UGX.)	(UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD63mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN75mm	No.	3		
7.2	DN65mm	No.	2		
7.3	DN50mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	STRUCTURAL METALWORK				
	Fabrication and erection of rolled steel section pipe bridge complete as				
	shown on drawings				
10.1	Span 3 - 5m at height not exceeding 2m.	No.	1		
10.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
	Total Carried to Collection		<u> </u>		
	Io.4 : DISTRIBUTION NETWORK		1		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
					\C JAI
	Reinstatement			į	

Scheme ID. 1.6: KYOMYA IN KIBOGA DISTRICT			Region:	Central			
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes						
11	Not exceeding DN300mm	m	24				
	Total Carried to Collection						
BILL N	Io. 4 : DISTRIBUTION NETWORK						
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
	Bill No. 4 Collection						
	Page 13						
	Page 14						
	Page 15						
	Total Bill No. 4 Carried to Bill Summary						

Region: Central

Scheme ID No. 1.7: LUBIRI IN KYANKWANZI DISTRICT

BILL SUMMARY

Bill	Description	Amount (UGx.)
No.		. ,
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				•
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
2	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated	m^2	840		
_	topsoil and the preparation of surfaces; 40m² at Intake Site and 800m² at Pump Station.	""	•		
3	Reinforced concrete pipe support/ pedestal to detail as per Drawings.	No.	2		
	MISCELLANEOUS METAL WORK				
4.1	Pump Protection System Diagonal pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	Item	1		
4.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawing No. OIS/NUC/SD/010,	Item	1		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
	Total Carried to Collection			<u> </u>	

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		(UGX.)
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME13	Earthing and Lightening Protection Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
RILL	Total Carried to Collection Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item		11!4	O4 -	Deta (UO:-)	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: Lot 2 - WESTERN & CENTRAL LOWER REGIONS Cheme ID No. 1.7: LUBIRUIN KYANKWANZI DISTRICT CONTROL CONTROL

Scheme ID	No. 1.7: LUBIRI IN KYANKWANZI DISTRICT		Region:	Central	
	S Alarm System complete with 1No. alarm horn and 1No.vibration sensor he pump protection as instructed by the Engineer.	Item	1		
MIS	CELLANEOUS WORKS				
Pun	np Protection System				
	gonal pipe sleeve pump anti-vandal protection including a floating suction embly structure to detail as per Drawing No. OIS/ABS/004.	No.	1		
Ker	bs				
	-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the owing alignment: -				
X2 Stra	night or curved to a radius exceeding 12 m	m	70		
	nm thick of 12 - 25mm size machine crushed aggregate cover under the ar Array laid onto a guage 500 polythene sheet.	m²	135		
X4 450	mm diameter reinforced concrete pipe/ culvert	m	0		
Pun	np House				
	struct a 12.0m superficial area Pump House to detail as per Drawing OIS/NUC/PH/001.	Sum	1		
K6a Galv			80		
barb	varnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of ped wire on top; height 2-2.5m at the Intake Site, including special option methods in "marshy grounds" to the Engineer's approval.	m	00		
	varnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of oed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Total Carried to Collection				

Region: Central

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Gates				, ,
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>		
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	1	1	1		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	1,200		
5	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	to PN 10, and of the following sizes DN65mm	No.	4		
6.1	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD75 female adapter	No.	2		

Region: Central

ltem	No. 2 : TRANSMISSION MAINS Description	Unit	Otv	Rate (UGx.)	Amount
No.	Description	Unit	Qty.	Rate (UGX.)	(UGx.)
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN75mm	No.	2		
			_		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	3		
J. I	DNYSHIII	NO.	3		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	otter onambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	or are renowing departs				
10.1	Depth not exceeding 1.5m	No.	2		
	4,				
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Total Carried to Collection		L	1	

Region: Central

BILL N	Io. 2 : TRANSMISSION MAINS		region.	Ochilai	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Surrounds</u>				, ,
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
40	One sente Ote de sent Themset Blanks				
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	T (0 0				
BILL N	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item	Description	Unit	Otre	Deta (UCv.)	Amount
No.	Description	Ullit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Dans 7				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

Region: Central

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 4.1	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		

	e ID No. 1.7: LUBIRI IN KYANKWANZI DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				, ,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
	following grades:		_		
8.1	Grade C15	m ³	2		
	Total Carried to Collection		1		
	Bill No. 3 Collection				
	Page 19				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary				

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(5 5111)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	158		
2.2	OD75mm PN10	m	200		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
	<u>Unequal tees</u>		_		
3.3	OD90 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	3		
5.2	OD50mm	No.	Rate Only		

Region: Central

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.3 6.4	Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. OD75mm OD63mm	No. No.	Rate Only Rate Only		
7 7.3 7.4	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. DN65mm DN50mm	No. No.	1 1		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm Other Pipework Ancillaries Marker Posts	No.	3		
9	Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	nr m	20		
	Total Carried to Collection		•		
	Bill No. 4 Collection Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary		<u> </u>		

Region: West

Scheme ID. 2.1: KAKUNYU IN KYOTERA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Scheme ID. 2.1: KAKUNYU IN KYOTERA DISTRICT

ILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including				
2.1	farming and hands along the shapped of avacuated material to fair profiles Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	72		
2.5	Soft / decomposed rock soils	m^3	18		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m^3	8		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m^2	40		

Scheme ID. 2.1: KAKUNYU IN KYOTERA DISTRICT

ILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter : 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		

Scheme ID. 2.1: KAKUNYU IN KYOTERA DISTRICT

	e ID. 2.1: KAKUNYU IN KYOTERA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6	Na	1		(,
	200 mm ND	No.	!		
12	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
13	MISCELLANEOUS WORK Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
16	Stone pitched Channel. 3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection	1	<u> </u>		

BILI N	Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = 15 m 3 /hr., rated head H = 55m total head; set to not more than $\underline{\bf 5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0009D.	No.	1		
ME9	4mm ² Borehole drop cable,	m	5		
ME10	4mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

Scheme ID. 2.1: KAKUNYU IN KYOTERA DISTRICT BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS			Region:	: vvest		
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
	Earthing and Lightening Protection				\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-	
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1			
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1			
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5			
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1			
ME17	GMS Alarm System complete with 1No. alarm hom and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1			
	MISCELLANEOUS WORKS					
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1			
	Kerbs					
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -					
X2	Straight or curved to a radius exceeding 12 m	m	70			
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135			
X4	450mm diameter reinforced concrete pipe/ culvert	m	0			
	Pump House					
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1			
	Total Carried to Collection					

Region: West

	No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ixegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	<u> </u>	
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				()
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

	Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes: DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	350		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as				
6.1	specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
	Equal Adapters				

BILL N	No. 2 : TRANSMISSION MAINS		-		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amoun
8	Valves and Penstocks				•
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	2		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
9.1	DN65mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	2		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	36		

	e ID. 2.1: KAKUNYU IN KYOTERA DISTRICT		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2	Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm	m	20		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	5		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Total Carried to Collection	l			
	No. 2 : TRANSMISSION MAINS	l		1 1	A
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	<u> </u>	1	1	

ILL N	Io. 4.3 : STORAGE RESERVOIR WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
	Tollowing height and reservior capacities.				
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
	supply openious and of the following supusity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
1	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	1		l		

	e ID. 2.1: KAKUNYU IN KYOTERA DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m ³	2		
	Total Carried to Collection		l		
	Io. 3 : STORAGE RESERVOIR WORKS		I	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 2.1: KAKUNYU IN KYOTERA DISTRICT		Region:	West	
	o.4 : DISTRIBUTION NETWORK	1	1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	420		
2.2	OD75mm PN10	m	175		
2.3	OD90mm PN10	m	55		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.3	OD75mm	No.	1		
0.0	OD/ OHIII	140.	'		
	Unequal tees				
3.8	OD75 x 63mm	No.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
-	F. J				
5 5.1	End caps	No	2		
J. I	OD63mm	No.	3		
	Total Carried to Collection				

Region: West

	10.4 : DISTRIBUTION NETWORK		Region.	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				/
6.1	OD63mm	No.	2		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	3		
8.1	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - DN50mm	No.	3		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads	nr	26		
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	12		
	Total Carried to Collection		<u> </u>		
BILL N	Io. 4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				

Scheme ID. 2.1: KAKUNYU IN KYOTERA DISTRICT	Region: West			
Page 13				
Page 14				
Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID No. 2.2: KABUSA IN RAKAI DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

LL N	le ID No. 2.2: KABUSA IN RAKAI DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	-1001	
em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
.1	Marshy soils	m^3	52		
.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
.4	Marshy soils	m^3	72		
.5	Soft / decomposed rock soils	m^3	18		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
.6	Marshy soils	m^3	16		
.7	Soft / decomposed rock soils	m^3	8		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the				
	drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Londocarine				
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
5.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
	Total Carried to Collection			1	

	e ID No. 2.2: KABUSA IN RAKAI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	vvest	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		(1111)
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
_	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Total Carried to Collection		<u> </u>		

DILL I	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Stone pitched Channel.				,
16	3.0×1.5 top x bottom width x 1.5 m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = $15 \text{ m}^3/\text{hr.}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a $1\times17No$. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0009D.	No.	1		
ME9	4mm ² Borehole drop cable,	m	5		
ME10	4mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

Item	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				, ,
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		

	e ID No. 2.2: KABUSA IN RAKAI DISTRICT		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Х6а	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection	l			
BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1	1	l I	Amount
No.	Description				(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Total Bill No. 1 Carried to Bill Summary				

SILL N	Io. 2 : TRANSMISSION MAINS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
-	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO				
0.4	2531 of the following sizes;		Data Oak		
2.1 2.2	DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
۷.۷	Divisini, in denotes, depuis not exceeding 1.5iii	1111	12		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	590		
0.1	PIPEWORK - FITTINGS AND VALVES	***	000		
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		

ILL N	Io. 2 : TRANSMISSION MAINS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441,				
	complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and				
	all fittings necessary to make the installation on pipes of the following sizes, all to				
	PN10, include chamber as specified.				
8.1	DN65mm	No.	2		
9	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe fittings;				
	tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and				
	all other fittings necessary to make the complete installation on pipes of the following				
	sizes; all to PN10 including valve surface box to detail.				
9.1	DN65mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the				
	following depths				
10.1	Depth not exceeding 1.5m	No.	2		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover securely attached				
	to main body of surface box by chain or bolt, include down pipe, complete as specified				
10 2	and to the following depths Depth not exceeding 1.5m	No.	2		
10.2	·	110.	-		
	Reinstatement Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following				
	pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	36		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	20		

Scheme ID No. 2.2: KABUSA IN RAKAI DISTRICT

	e ID No. 2.2: KABUSA IN RAKAI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	vvest	
Item		Ī			Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	5		
13	Concrete Stools and Thrust Blocks				
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for				
	the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Total Carried to Collection				
	o. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.					(UGX.)
	Bill No. 2 Collection				
	Page 7				
	Page 8				
	Page 9				
	1 495 5				

Total Bill No. 2 Carried to Bill Summary

<u>LL N</u>	o. 4.3 : STORAGE RESERVOIR WORKS				
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	<u>Reservoir</u>				
	Erect a welded steel tower for reservoir support complete, include foundations,				
	columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates,				
	anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
•	Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water				
	Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks				
	or any other approved complete with a lockable access man ways, inlet/ riser, ball				
	float valve, overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications and of the				
	following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive,				
	complete with all fittings, installation on the following GI pipe sizes, pressure ratings				
4	and supply of a pair of replacement screen element and seal ring:-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive,				
•	complete with all fittings, installation on the following GI pipe sizes, pressure ratings				
	and supply of a pair of replacement disk element and seal ring:-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	Landscaping and Walkways				
5.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method"	No.	Rate Only		
	between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.				
7	<u>Fences</u>				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		

	e ID No. 2.2: KABUSA IN RAKAI DISTRICT		Region:	West	
Item No.	lo. 3 : STORAGE RESERVOIR WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		(00x.)
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	lo. 3 : STORAGE RESERVOIR WORKS	1			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				
	Total Bill No. 3 Carried to Bill Summary	<u> </u>			

BILL No	ID No. 2.2: KABUSA IN RAKAI DISTRICT 0.4: DISTRIBUTION NETWORK		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
9	General Site Clearance				
	General site clearance 1.5m wide working corridor along the pipeline route, including telling trees, grabing tree stumps and disposal of arising materials.	Item	1		
<u> </u>	PIPEWORK-PIPES				
2 F	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the ollowing depths not exceeding 1.5m				
2.1	DD63mm PN10	m	90		
2.2	DD75mm PN10	m	308		
F	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3 <u>E</u>	Equal tees				
3.3	DD75mm	No.	1		
L	Jnequal tees				
3.8	DD75 x 63mm	No.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.3	DD75mm	No.	Rate Only		
4.4	DD63mm	No.	Rate Only		
5 E	End caps				
5.1	DD63mm	No.	3		
6 V	/alves and Penstocks				
	Air Vaves				
<u> </u>	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441,				
<u>c</u>	complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and				
	all fittings necessary to make the installation on pipes of the following sizes, all to				
1-	PN10, include chamber as specified. DD63mm	No.	2		
		110.	_		
	Vashouts				
	Nashout as specified in the drawings, complete with plastic compression pipe fittings;				
_	ee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to				
_	make the complete installation on pipes of the following sizes; all to PN10 including				
I —	valve surface box and stone masonry outfall structure to detail as per Drawing No.				
	DIS/NUC/SD/004.	Na	3		
7.1	DN65mm	No.	J		

	e ID No. 2.2: KABUSA IN RAKAI DISTRICT		Region:	West	
Itom	o.4 : DISTRIBUTION NETWORK				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main,				
	inclusive of PVC compressive ball valve and end cap complete with connector pipes				
	and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following				
8.1	mains sizes and all to PN10: - DN50mm	No.	3		
0.1	DNSOIIIII	INO.	3		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Delinated word				
	Reinstatement Roads				
	Rodus				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following				
	pipe sizes				
4.0			40		
10	Not exceeding DN300mm Total Carried to Collection	m	12		
RII I N	lo. 4 : DISTRIBUTION NETWORK				
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 4 Collection				
	Page 12				
	. 290				
	Page 13				
	T (18/19) (A 11/18/19)				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT

BILL SUMMARY

Bill No.	Description Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	IE ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	72		
2.5	Soft / decomposed rock soils	m ³	18		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
3	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of	3	10		
J	top/ vegetable soil.	m ³	10		
	Total Carried to Collection				

<u>IL</u> L N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		

	10.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
40	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5 m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Total Carried to Collection				
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				

	e ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT	-	Region:	Central	
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
	Total Carried to Collection	•	•	•	

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME10a	6mm² UV Single Cable.	m	60		, ,
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		

Region: Central

No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		, ,
450mm diameter reinforced concrete pipe/ culvert	m	0		
Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
Total Carried to Collection				
Bill No. 1 Collection				
Page 2				
Page 3				
Page 4				
Page 5				
Page 6				
Page 7				
	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array Iaid onto a guage 500 polythene sheet. 450mm diameter reinforced concrete pipe/ culvert Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval. Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site. Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval Total Carried to Collection Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	Description 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet. 450mm diameter reinforced concrete pipe/ culvert m Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval. Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site. Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval Total Carried to Collection Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6 Page 7	Description	Description

	e ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				\ <i> </i>
1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:		12		
Z. I	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
3.1	trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	621		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	to PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
6.1	following main pipe sizes DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
	Total Carried to Collection				

	IE ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT NO. 2: TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				, ,
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.2	DN75mm	No.	1		
·-	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Total Carried to Collection				

	e ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT Io. 2: TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				, ,
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	40		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Total Carried to Collection				
	Bill No. 2 Collection				
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	1	1	1	

	e ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT Io. 4.3: STORAGE RESERVOIR WORKS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
•	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]			1	
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

	e ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				, ,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
DII I A	Total Carried to Collection lo. 3 : STORAGE RESERVOIR WORKS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Description	Oilit	Qty.	Nate (OOX.)	(UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

Scheme ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT

	e ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.2	OD75mm PN10	m	380		
2.3	OD63mm PN10	m	480		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.4	OD63mm	No.	2		
	Heaviel too				
3.8	<u>Unequal tees</u> OD75 x 63mm	No.	5		
0.0	5575 X 5511111	110.			
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
,	0				
4 4.2	Couplers OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	4		
		<u> </u>			
	Total Carried to Collection				

neme ID. 2.3: NDIBULUNGI IN BUTAMBALA DISTRICT LL No.4: DISTRIBUTION NETWORK		Region:	Central	
em Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 Valves and Penstocks				
Air Vaves				
Flanged CI double orifice air relief valve, DN50mm, as specified				
flanges to ISO 2441, complete with isolating gate valve to ISO 7259	<u>,</u>			
flange adaptors, distance pieces, and all fittings necessary to make	_			
the installation on pipes of the following sizes, all to PN10, include				
chamber as specified.				
.1 OD90mm	No.	Rate Only		
.2 OD75mm	No.	Rate Only		
7 Washouts				
Washout as specified in the drawings, complete with plastic				
compression pipe fittings; tee, drainage pipes, PVC union ball valve,	,			
flap valve and all other fittings necessary to make the complete	_			
installation on pipes of the following sizes; all to PN10 including valve	e			
surface box and stone masonry outfall structure to detail as per	_			
Drawing No. OIS/NUC/SD/004.				
.1 DN65mm	No.	2		
8 Farm Gate Connections				
Make DN50mm Irrigation Water Supply Hydrant connection to the				
distribution main, inclusive of PVC compressive ball valve and end				
cap complete with connector pipes and locakable chamber as detaile	ed			
on Drawing No. OIS/NUC/SD/008, for the following mains sizes and				
to PN10: -				
.1 DN50mm	No.	4		
Other Pipework Ancillaries				
Marker Posts				
9 Marker posts for pipes, gate valves, air valves, washouts	nr	42		
Reinstatement				
Breaking up, temporary and permanent reinstatement of gravel roads	3			
for the following pipe sizes				
Not exceeding DN300mm	m	36		
Total Carried to Collection		•	_	
Bill No. 4 Collection				
Page 13				
Page 14				
Total Bill No. 4 Carried to Bill Summary	,			

Region: Central

Scheme ID. 2.4: LWABENGE IN KALUNGU DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: Central

BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		3.5		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	68		
2.5	Soft / decomposed rock soils	m^3	17		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
3	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of	m^3	10		
	top/ vegetable soil. Total Carried to Collection				
	i otal Carried to Collection				

	e ID. 2.4: LWABENGE IN KALUNGU DISTRICT		Region:	Central	
	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		T	· · · · · · · · · · · · · · · · · · ·	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
Total Carried to Collection					

Region: Central

tem	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1114	0,	D-4- (U.O.)	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	ODZZƏHIH PINTO piain end uPVO pipe connection between Əlit Hap basın	m	8		
11	Bellmouths Fianged beinnoun to 130 233 1, nanges to 130 244 1, or the following sizes an				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
12	Gate Valves: Hand Operated DIN 200 Hilli all lialiged Of gate valves to DO 0 100 , lialiges to DO 4000 , all to DN 6 for operation by too key with extension opindle not exceeding 4.5				
	MISCELLANEOUS WORK Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729,	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 -	nr	Rate Only		
	Total Carried to Collection				

Region: Central

	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
	7.5kW Submersible Pump Set with 11.05kW Pumping Inverter with Data Module, rated flow Q = 20 m 3 /hr., rated head H = 75m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
МЕ7а	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
	Total Carried to Collection				

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		. ,
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration	Item	1		
	sensors per array.				
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		

Region: Central

	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	,	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m			
	0-4		10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>	l	
	Bill No. 1 Collection Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

Region: Central

BILL N	Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only 12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD790mm HDPE PN10	m	585		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN75mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
6.1	following main pipe sizes DN75mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter Total Carried to Collection	No.	2		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				(UGX.)
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.	1			
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	l m	12		
	I Vot exceeding Divocomini	'''	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	30		
12.1	Total Carried to Collection	m	30		

Region: Central

BILL N	Io. 2 : TRANSMISSION MAINS		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2	Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm	m	48		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	24		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries	No.	Rate Only		
14	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	28		
	Total Carried to Collection			•	
	Io. 2 : TRANSMISSION MAINS	•			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary				
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Region: Central

BILL N	o. 4.3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4.1	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring:- DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				-

Region: Central

	o. 3 : STORAGE RESERVOIR WORKS		Region.	oona.	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
BILL N	Total Carried to Collection o. 3 : STORAGE RESERVOIR WORKS	l			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
_	Total Bill No. 3 Carried to Bill Summary			•	

Region: Central

BILL N	o.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	254		
2.2	OD75mm PN10	m	140		
2.3	OD90mm PN10	m	134		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	Rate Only		
3.2	OD75mm	No.	Rate Only		
3.3	OD63mm	No.	Rate Only		
	Unequal tees				
3.4	OD90 x 75mm	No.	1		
3.5	OD90 x 63mm	No.	2		
3.6	OD75 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	4		
	Total Carried to Collection				
BILL N	o.4 : DISTRIBUTION NETWORK				

Schem	e ID. 2.4: LWABENGE IN KALUNGU DISTRICT		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per				
7.1	Drawing No. OIS/NUC/SD/004. DN75mm	No.	1		
7.2	DN65mm	No.	1		
8.1	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - DN50mm	No.	4		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
10	Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	36		
	Total Carried to Collection				
	Bill No. 4 Collection Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				-

Region: Central

Scheme ID. 2.5: BUGERE IN MASAKA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
NO.		
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: Central

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				(0.000)
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	60		
2.5	Soft / decomposed rock soils	m^3	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
11 / 1	Total Carried to Collection No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
em	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Landscaping		, .	(= 0,)	(UGx.)

Schem	e ID. 2.5: BUGERE IN MASAKA DISTRICT		Region:	Central	
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Total Carried to Collection	<u> </u>	1	1	0

	e ID. 2.5: BUGERE IN MASAKA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Jonata	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				,
9	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection			İ	

BILL N	e ID. 2.5: BUGERE IN MASAKA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		rtogioin	Central	
	Description	Unit	Qty.	Rate (UGx.)	Amount
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.05kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 75m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ИЕ7а	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
1E10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
1E11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

	e ID. 2.5: BUGERE IN MASAKA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				

	e ID. 2.5: BUGERE IN MASAKA DISTRICT No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		()
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
	plant and equipment supplied as per the technical specifications and to the Project Manager's approval				
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection	1			
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

	e ID. 2.5: BUGERE IN MASAKA DISTRICT		Region:	Central	
Item No.	lo. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	330		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN75mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD90 female adapter	No.	2		
8	Valves and Penstocks Air Valves				
8.1	Flanged CI double orifice air relief valve, DN50mm, as specified DN75mm	No.	1		
	Total Carried to Collection				

	e ID. 2.5: BUGERE IN MASAKA DISTRICT No. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Washouts				\
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	20		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	20		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	10		
				II I	

Scheme ID. 2.5: BUGERE IN MASAKA DISTRICT

	e ID. 2.5: BUGERE IN MASAKA DISTRICT		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Concrete Stools and Thrust Blocks				, ,
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
13.1	Diameter not exceeding Divizoniiii	INU.	rate only		
	Other Pipework Ancillaries Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection	<u> </u>			
BILL N	Io. 2 : TRANSMISSION MAINS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				

Total Bill No. 2 Carried to Bill Summary

	e ID. 2.5: BUGERE IN MASAKA DISTRICT o. 4.3 : STORAGE RESERVOIR WORKS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				\ <i>T</i>
1	General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 4.1	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring:-DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

Region: Central

BILL N	Io. 3 : STORAGE RESERVOIR WORKS						
Item	Description	Unit	Qty.	Rate (UGx.)	Amount		
6	Landscaping and Walkways						
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150				
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only				
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60				
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1				
	Provision and Placing of Concrete Ordinary Designed Mix Concrete						
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the						
8.1	following grades: Grade C15	m ³	2				
	Total Carried to Collection	<u> </u>	I				
BILL N	Io. 3 : STORAGE RESERVOIR WORKS						
Item	Description	Unit	Qty.	Rate (UGx.)	Amount		
	Bill No. 3 Collection		-				
	Page 11						
	Page 12						
	Total Bill No. 3 Carried to Bill Summary						

	e ID. 2.5: BUGERE IN MASAKA DISTRICT		Region:	Central	
	lo.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount
item	DEMOLITION AND SITE CLEARANCE	Oilit	Qty.	rtate (OOX.)	Alliount
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	330		
2.2	OD75mm PN10	m	100		
2.3	OD90mm PN10	m	372		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	1		
	Unequal tees				
3.2	OD90 x 75mm	No.	1		
3.3	OD90 x 63mm	No.	6		
3.4	OD75 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	5		
	Total Carried to Collection				

	e ID. 2.5: BUGERE IN MASAKA DISTRICT		Region:	Central	
Item No.	Io.4: DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified				\(\frac{1}{2} \)
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include				
6.1	chamber as specified. OD75mm	No.	1		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per				
7.1	Drawing No. OIS/NUC/SD/004. DN75mm	No.	2		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	5		
9	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	32		
	Total Carried to Collection	1			
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Scheme ID. 2.6: KYOMYA IN MPIGI DISTRICT	Region:	Central
BILL SUMMARY		

	UNINACI	
Bill No.	Description	Amount (UGx.)
110.		
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3		
J	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	72		
2.5	Soft / decomposed rock soils	m^3	18		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m^3	8		
	Filling Structures				
3	Filling to precast concrete sump structure by methods specified and to depths Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Total Carried to Collection		•		

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
	Description	Unit	Qty.	Rate (UGx.)	Amount
	Landscaping) /	
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
5.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
5.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				(0.01)
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5 m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Total Carried to Collection		<u> </u>	I	
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT	•	Region:	Central	i į			
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 75m total head; set to not	No.	1					
	more than <u>5m</u> below ground including Dry- run protection, Motor and Pump							
	End.							
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump	Item	1					
	system complete including wiring.							
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and	Sum	1					
	suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per							
	drawings, including foundations, vandal proofing mounting to the Engineer's approval							
ME4	PV Disconnect 1000-40-2	No.	1					
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1					
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level	Item	1					
	etc.							
ME7	PV Combiner	No.	1					
ME7a	Pressure Switch and Gauge - P5/8	No.	1					
ME8	Sinewave filter - SWAP0017D.	No.	1					
ME9	16mm ² Borehole drop cable,	m	5					
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	175					
	Total County of to College the con-							
	Total Carried to Collection							

BILL N	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	6mm² UV Single Cable.	m	60		,
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the				
	following alignment: -				
X2	Straight or curved to a radius exceeding 12 m Total Carried to Collection	m	70		

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
	<u>Fences</u>				
Х6а	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	422		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	Total Carried to Collection	1	1		

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	4		
	Total Carried to Collection				

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement				(5 5)
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes		D . O .		
11	Not exceeding DN300mm	m	Rate Only		
	Surroundo				
	<u>Surrounds</u> Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	10		
14.1	Thot exceeding Diversimin	'''	10		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	40		
	J				
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	24		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
40.4	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection	<u> </u>		<u> </u>	
BILL N	lo. 2 : TRANSMISSION MAINS				
Item	Description	11:4	04.	Data (UCv.)	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	D 2				
	Page 8				
	Page 9				
	r aye a				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	•			

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	Johnai	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
	non corrosive, complete with all fittings, installation on the following GI				
	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.2	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
	Total Carried to Collection				

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	lo. 3 : STORAGE RESERVOIR WORKS	1	T		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary	<u> </u>	I	1	

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD75mm PN10	m	320		
2.2	OD63mm PN10	m	389		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
_					
3	Equal tees	NI-	Rate Only		
3.1 3.2	OD90mm OD75mm	No. No.	Rate Only		
3.2		INO.	rate only		
	Unequal tees				
3.3	OD90 x 75mm	No.	Rate Only		
3.4	OD90 x 63mm	No.	1		
3.5	OD75 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4 .1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	5		
	Total Carried to Collection				

	e ID. 2.6: KYOMYA IN MPIGI DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Contrai	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				,
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN75mm	No.	Rate Only		
7.2	DN65mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	28		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 2.7: NALYAMAGONJA IN KALANGALA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	64		
2.5	Soft / decomposed rock soils	m^3	16		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		

Region: Central

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				, ,
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m^3	0.25		
5.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
5.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		

	e ID. 2.7: NALYAMAGONJA IN KALANGALA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all				
	to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to				
	PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200	Item	Rate Only		
	gate valve. Branch height/ positioning to be determined on site.				
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5 m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 75m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				
	No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Item No.	Description Fences	Unit	Qty.	Rate (UGx.)

Schem	e ID. 2.7: NALYAMAGONJA IN KALANGALA DISTRICT		Region:	Central
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50	
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10	
	<u>Gates</u>			
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2	
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1	
	Operation and Maintenance Manuals			
Х9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1	
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only	
	Total Carried to Collection			
	Bill No. 1 Collection			
	Page 2			
	Page 3			
	Page 4			
	Page 5			
	Page 6			
	Page 7			
	Total Bill No. 1 Carried to Bill Summary		1	

	e ID. 2.7: NALYAMAGONJA IN KALANGALA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN10	m	750		
4 4.1	uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 Depth not exceeding 1.5m	m	Rate Only		
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all		,		
5.1	DN75mm	No.	4		
6.1	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN75mm PN10	No.	1		
	Total Carried to Collection				

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.	PN16 HDPE Compression fitting to DIN 8074/BS 5114				(OOX.)
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
3.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
0.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes			1	
11	Not exceeding DN300mm	m	24	1	
-		•••			
			1		

Region: Central

BILL N	Io. 2 : TRANSMISSION MAINS		Kegion.	Contra	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.1	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm	m	40		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	70		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	36		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	30		
	Total Carried to Collection				
	Io. 2 : TRANSMISSION MAINS		1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Dill No. 0.0				
	Total Bill No. 2 Carried to Bill Summary				

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring:-DN75mm, PN10	No.	1		
4.1	DIVI SITIITI, PIN TO	NO.	'		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
5.1	DN75mm, PN10	No.	1	1	

Region: Central

BILL N	Io. 3 : STORAGE RESERVOIR WORKS		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	Io. 3 : STORAGE RESERVOIR WORKS			I.	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	148		
2.2	OD75mm PN10	m	400		
2.3	OD90mm PN10	m	35		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.2	OD90mm	No.	1		
	Unequal tees				
3.8	OD75 x 63mm	No.	3		
3.9	OD75 x 63mm, Bend	No.	1		
4.0	OD63mm, Bend	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	5		
	Total Carried to Collection	<u> </u>	1		

Region: Central

Item No.	No.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				,
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD90mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	2		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	27		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm Total Carried to Collection	m	24		
	Total Carried to Collection			1	
	Bill No. 4 Collection				
	Page 13				
	raye 13				
	Page 14				

Region: Central

${\bf Scheme~ID.~2.8:~GAYAZA~IN~BUKOMANSIMBI~DISTRICT}$

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
NO.	WORK ITEMS	
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	IE ID. 2.8: GAYAZA IN BUKOMANSIMBI DISTRICT IO.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Centrai	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	57		
2.2	Ditto but for the Intake Structure	m ³	34		
2.3	Excavation to form trapezoidal drain in marshy soils, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	175		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	12		
3.2	Imported murram.	m ³	10		
4	Single layer of geotextile laid to manufaturer's specifications	m ²	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m² at Intake Site and 800m² at Pump Station.	m ²	840		
	Total Carried to Collection				

Region: Central

	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			1	A 1
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				` '
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m^3	1.1		
	of the following thickness				
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe and Heel				
6.2	200mm thick toe.	m ³	0.3		
6.3	200mm thick base slab.	m^3	2.4		
6.4	350/ 200mm thick reaining wall/ weir stem.	m ³	0		
6.5	200mm thick sump walls.	m^3	13.5		
6.6	200mm thick top slab.	m^3	1.2		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including	m^2	140		
	charmfering and / or filleting of all exposed concrete corners.				
	Einighing of tan gurfage				
7 2	Finishing of top surfaces	2	11		
7.3	Steel trowel finishing of top surfaces. Total Carried to Collection	m ²	11		

Region: Central

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	1.2		
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two	No.	Rate Only		
	faces of the concrete wall and of the following sizes, excluding supply of pipe.				
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	Rate Only		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -				(COM)
9.6	300mm wide x 1000mm high.	No.	1		
10.1	MISCELLANEOUS METAL WORK Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
10.3	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
10.4	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	ELECTRO-MECHANICAL WORKS				
ME1	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 15 m ³ /hr., rated head H = 100m total head; set to not	No.	1		
ME2	more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End. 2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump	Item	1		
-	system complete including wiring.				
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		

Region: Central

	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		

Region: Central

Item	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	11. 14	01	D-4- (U.O.)	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor	Item	1		
	for the pump protection as instructed by the Engineer.				
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a	No.	1		
	floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a				
	or OIS/ABS/003, including 1.5x1.5x0.3m support base.				
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the				
	following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the	m²	220		
	Solar Array laid onto a guage 500 polythene sheet.				
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House_				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
	No.OIS/NUC/PH/001.				
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of	m	80		
	barbed wire on top; height 2-2.5m at the Intake Site, including special erection				
	methods in "marshy grounds" to the Engineer's approval.				
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of	m	120		
	barbed wire on top; height 2-2.5m at the Pumping Station Site.				
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the	No.	2		
	fence.				
	Total Carried to Collection			1	

Region: Central

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
	Training of Operator's staff						
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1				
	Operation and Maintenance Manuals						
Х9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1				
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only				
	Total Carried to Collection						
BILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS						
Item No.	Description				Amount (UGx.)		
	Bill No. 1 Collection						
	Page 2						
	Page 3						
	Page 4						
	Page 5						
	Page 6						
	Page 7						
	Page 8						
	Total Bill No. 1 Carried to Bill Summary	<u> </u>		<u> </u>			

Region: Central

Item No. Description Description DeMOLITION AND SITE CLEARANCE General Site Clearance Site Clearance General Site Clearance Site Clearance General Site Clearance Site Clea	ILL No	D. 2 : TRANSMISSION MAINS		<u> </u>		
General Site Clearance General Site Clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORKS - PIPES Steel Pipes Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; 2.1 DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m m 12 3 HDPE Pipes HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm No. 4 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters		Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
2. Steel Pipes Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes: 2.1 DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m 3. HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m 3.1 OD75mm HDPE PN10 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes 5.1 DN65mm No. 4 6 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes 6.1 DN65mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of	Item	1		
unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m ### Minimum	1-					
2.2 DN75mm, in trenches; depths not exceeding 1.5m m 12 3 HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m 3.1 OD75mm HDPE PN10 m 720 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm No. 4 6 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	1-					
HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10 m 720 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm No. 4 Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters						
Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes 5.1 DN65mm No. 4 Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	<u> </u>	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m	m	720		
5 Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes 5.1 DN65mm No. 4 6 Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes 6.1 DN65mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	l	PIPEWORK - FITTINGS AND VALVES				
Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fqual Adapters	5 <u>!</u>	Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes	No.	4		
6.1 DN65mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	6 <u>!</u>	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
7 Equal Adapters			No.	1		
	<u> </u>	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
			No.	2		
Total Carried to Collection		Total Countied to Collection				

-	e ID. 2.8: GAYAZA IN BUKOMANSIMBI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8 8.1 9	Valves and Penstocks Air Valves Flanged Cl double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN65mm Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to	No.	2		
9.2	PN10 including valve surface box to detail. DN75mm PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers	No.	Rate Only		
10.1	Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover	No.	2		
10.2	securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths Depth not exceeding 1.5m Reinstatement Roads	No.	2		
11	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	24		
	Total Carried to Collection		<u> </u>	<u> </u>	

Region: Central

BILL N	o. 2 : TRANSMISSION MAINS				
Itom	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	70		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	80		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	24		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	25		
	Total Carried to Collection				
BILL N	o. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Bill No. 2 Concollon				
	Page 9				
	Page 10				
	Ç				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary				0

Region: Central

Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	DEMOLITION AND SITE CLEARANCE			, ,	(UGx.)
	General Site Clearance				
	General site slearance including trees, stumps and disposal of arising	Item	1		
1	materials.	псш	ı		
	illiaterials.				
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
	Tollowing Holghicana robot for sapadition.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	450 000 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-		_		
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

Region: Central

BILL N	Io. 3 : STORAGE RESERVOIR WORKS		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m^3	2		
	Total Carried to Collection				
RII I N	lo. 3 : STORAGE RESERVOIR WORKS				
Item	IO. 5 . STORAGE RESERVOIR WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

ILL No.4 : DISTRIBUTION NETWORK		Region:		
tem No.	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
DEMOLITION AND SITE CLEARANCE				
General Site Clearance				
General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
PIPEWORK-PIPES				
Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
trench to the following depths not exceeding 1.5m				
2.1 OD75mm PN10	m	1,200		
2.2 OD90mm PN10	m	680		
PIPEWORK - FITTINGS AND VALVES				
PN10 HDPE Compression fitting to DIN 8074/BS 5114				
Plastic Pipe Fittings				
3 Equal tees				
3.1 OD90mm	No.	Rate Only		
3.2 OD75mm	No.	4		
Unequal tees				
3.3 OD90 x 75mm	No.	Rate Only		
3.4 OD90 x 63mm	No.	Rate Only		
3.5 OD75 x 63mm	No.	8		
PN10 HDPE Compression fitting to DIN 8074/BS 5114				
Plastic Pipe Fittings				
4 <u>Couplers</u>				
4.1 OD90mm	No.	Rate Only		
4.2 OD75mm	No.	Rate Only		
4.3 OD63mm	No.	Rate Only		
5 End caps				
5.1 OD90mm	No.	2		
5.2 OD75mm	No.	2		
Total Carried to Collection				

Region: Central

Scheme ID. 2.8: GAYAZA IN BUKOMANSIMBI DISTRICT

BILL N	Io.4: DISTRIBUTION NETWORK				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD90mm	No.	2		
6.2	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
	No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	6		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	16		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	75		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary	-	-		

Region: Central

Scheme ID. 2.9: KYAWAMALA IN BUKOMANSIMBI DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: Central

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	${\sf m}^3$	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	72		
2.5	Soft / decomposed rock soils	m^3	18		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m^3	8		
	Filling Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m^3	10		

Region: Central

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				, ,
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m^2	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m^3	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
5.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				,
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection	•	•		

Region: Central

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = $15 \text{ m}^3/\text{hr.}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0009D.	No.	1		
ME9	4mm ² Borehole drop cable,	m	5		
ME10	4mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
	Total Carried to Collection	1	<u> </u>	1	

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		

Region: Central

BILL N	Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>		
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1 2.2	DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	480		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to				
5.1	PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
6.1	following main pipe sizes DN65mm PN10	No.	1		
	Total Carried to Collection				

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN65mm	No.	Rate Only		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Manager in the character and the control of the description and				
	Masonry air valve chamber, complete as specified in the drawings, and				
10 1	of the following depths	Na	4		
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		

Region: Central

BILL N	No. 2 : TRANSMISSION MAINS			23	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
10.1	Biamotor not oxocoung Bivizoniin	140.			
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection				
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Days 10				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary				

Region: Central

Item No.	lo. 4.3 : STORAGE RESERVOIR WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.4	Height; 9.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

Region: Central

BILL N	o. 3 : STORAGE RESERVOIR WORKS		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	$500 \times 500 \times 50$ mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	barboa wire on top, neight 2 2.om.				
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete				
	Ordinary Designed Mix Concrete				
	,,,				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m^3	2		
0.1	Grade 010	""	_		
	Total Carried to Collection				
BILL N	o. 3 : STORAGE RESERVOIR WORKS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary		1	<u> </u>	

Region: Central

BILL N	Io.4: DISTRIBUTION NETWORK		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD75mm PN10	m	212		
2.2	OD75mm PN10	m	132		
2.3	OD90mm PN10	m	285		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	Rate Only		
3.2	OD75mm	No.	1		
	Unequal tees				
3.3	OD90 x 75mm	No.	2		
3.4	OD90 x 63mm	No.	3		
3.5	OD75 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	11		
	Total Carried to Collection				

Region: Central

	Io.4: DISTRIBUTION NETWORK		Region.	•••••	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
	No. OIS/NUC/SD/004.				
7.1	DN75mm	No.	3		
7.2	DN65mm	No.	2		
7.3	DN50mm	No.	3		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	68		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
-	Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
110.	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			 		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
	General Site Clearance				,	
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1			
	Earthworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.					
2.1	Marshy soils	m^3	52			
2.2	Soft / decomposed rock soils	m^3	26			
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.					
2.4	Marshy soils	m^3	80			
2.5	Soft / decomposed rock soils	m^3	20			
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.					
2.6	Marshy soils	m^3	16			
2.7	Soft / decomposed rock soils	m^3	8			
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -					
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m^3	10			

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				•
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Total Carried to Collection		<u> </u>	1 +	

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	vvest	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				` '
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Total Carried to Collection				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				(/
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	9.2kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 15 m^3 /hr., rated head H = 140m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				,
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Total Carried to Collection				

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				,
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	Gates				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>		
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				· · · · · · · · · · · · · · · · · · ·

	lo. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount
	DEMOLITION AND SITE CLEARANCE	Ome	Q.y.	rate (CCX.)	741104111
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
2	PIPEWORKS - PIPES Steel Pipes				
-	<u> </u>				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN16	m	1,150		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.1	DN75mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
C 1	following main pipe sizes DN75mm PN16	No	1		
6.1		No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT		Region:	West	
Item No.	Io. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
8.1	DN75mm	No.	1		
9	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
1.01	Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement Roads				
11	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	12		
	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Total Carried to Collection				_

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	sizes Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection				
	Io. 2 : TRANSMISSION MAINS	1	Π	T	A 4
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Dill No. 0.0 cmiled to Dill 0				
	Total Bill No. 2 Carried to Bill Summary				

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				11
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
	Tollowing height and reservior supusitios.				
2.1	Height; 1.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	450 200 micron union/ compression tune clear uPVC V. Carson Filter				
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
	pipe sizes, pressure ratings and supply of a pair of replacement				
11	screen element and seal ring :-	NI.	4		
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection			<u> </u>	

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT		Region:	West	
Item No.	lo. 3 : STORAGE RESERVOIR WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
	following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection	<u> </u>			
	Io. 3 : STORAGE RESERVOIR WORKS	ı	ı	, ,	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary	<u> </u>			

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1 2.2	OD63mm PN10 OD63mm PN16	m	983 Rate Only		
2.2	OD75mm PN10	m m	943		
2.4	OD75mm PN16	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	1		
3.2	OD63mm	No.	2		
	Unequal tees				
3.3	OD75 x 63mm	No.	10		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4 .1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5 .1	OD63mm	No.	6		
	Total Carried to Collection				

	e ID. 3.1: KIKUTSI IN ISINGIRO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	6		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	22		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID. 3.2: KIKATSI IN KIRUHURA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	64		
2.5	Soft / decomposed rock soils	m ³	16		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	Total Carried to Collection			İ	

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement				
	to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for the following				
	structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT		Region:	West	
Item No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bellmouths				. ,
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
16	Stone pitched Channel. 3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Oakier haves				
17	Gabion boxes PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				(/
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 100m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	Total Carried to Collection		-		

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		, ,
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME4C	Alarm System		4		
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in <a approval"="" engineer's="" href="marshy grounds" the="" to="">marshy grounds to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	Gates				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection	1			
BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			ļ	
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary	<u> </u>	<u> </u>	1	

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT o. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		,
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only 12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN10	m	860		
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN DN75mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN75mm PN10	No.	1		
7	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	<u>Valves and Penstocks</u> <u>Air Valves</u> Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO				
8.1	DN75mm Total Carried to Collection	No.	2		
	Total Carried to Collection				

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Washouts				(00x.)
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall				
	structure and all other fittings necessary to make the complete installation on				
	pipes of the following sizes; all to PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
0.1	Depth not exceeding 1.5m	No.	2		
0.1		140.	_		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover securely				
	attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	1		
0.2	Deput not exceeding 1.5m	INO.	'		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the				
	following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the following pipe				
	<u>sizes</u>				
2.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
2.2	Not exceeding DN200mm	m	60		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
2.3	Not exceeding DN200mm	m	40		
	Total Carried to Collection			1	

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Concrete Stools and Thrust Blocks				()
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2				
	m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the				
	following pipe sizes				
11	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
BILL N	o. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	1		1	

m	Description	Unit	Qty.	Rate (UGx.)	Amount
0.	DEMOLITION AND SITE CLEARANCE			1	(UGx.)
	General Site Clearance				
	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
1	School Site Sicuration including trees, stamps and disposal of arising materials.	ito	·		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include foundations,				
	columns, beams, acess ladders, plates, braces, walkway/ guardrail, base				
	plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as				
	specified and detailed in the drawings, of the following height and reservior				
	capacities.				
.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water				
	Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest				
	Tanks or any other approved complete with a lockable access man ways, inlet/				
	riser, ball float valve, overflow with insect screen, float type water level indicator				
	and outlet/ down pipe with a strainer, washout and overflow connection,				
	including interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe sizes,				
4	pressure ratings and supply of a pair of replacement screen element and seal				
	ring :-				
1	DN65mm, PN10	No.	1		
.1	2.100mm, 1.110	140.	'		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe sizes,				
	pressure ratings and supply of a pair of replacement disk element and seal ring				
	IODTIONALI				
.3	[OPTIONAL] DN65mm, PN10	No.	1		
.ა	·	INO.	ı		
3	Landscaping and Walkways	2	150		
.1	Turfing for lawns inside fenced off compound; including filling with excavated	m ²	150		
	topsoil and preparation of surfaces.				

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		()
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
BILL N	Total Carried to Collection o. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 3.2: KIKATSI IN KIRUHURA DISTRICT o.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				•
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD75mm PN10	m	1,170		
2.1	OD90mm PN10	m	648		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3 3.1 3.2	Equal tees OD90mm OD75mm	No. No.	Rate Only		
	<u>Unequal tees</u> OD90 x 75mm OD90 x 63mm OD75 x 63mm	No. No. No.	Rate Only Rate Only 4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.2	OD90mm	No.	Rate Only		
	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
_					
5	End caps	N.			
5.1	OD63mm	No.	8		
	Total Carried to Collection	•			

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				(UUX.)
•	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO				
	2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance				
	pieces, and all fittings necessary to make the installation on pipes of the				
	following sizes, all to PN10, include chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other				
	fittings necessary to make the complete installation on pipes of the following				
	sizes; all to PN10 including valve surface box and stone masonry outfall				
	structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	3		
7.2	DN50mm	No.	3		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	64		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the				
	following pipe sizes				
10	Not exceeding DN300mm	m	24		
	Total Carried to Collection	-		Ţ	
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Scheme ID. 3.3: RWENTAMU IN LYANTONDE DISTRICT Region: West BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Landscaping				
2	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m² at Intake Site and 800m² at Pump Station.	m ²	840		
3	Reinforced concrete pipe support/ pedestal to detail as per Drawings.	No.	2		
	MISCELLANEOUS METAL WORK				
	Pump Protection System				
4.1	Diagonal pipe sleeve pump anti-vandal protection structure to detail as per Drawing No OIS/NUC/SD/010.	Item	1		
4.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawings	Item	1		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m² at Intake Site and 800m² at Pump Station.	m ²	840		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 100m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	Total Carried to Collection				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				

Region: West

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Gates				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
Х9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>		
BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item	Description				Amount
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				<u> </u>

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
<u> </u>	DEMOLITION AND SITE CLEARANCE				(00%.)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes:				
.1	DN75mm, not in trenches;	m	Rate Only		
.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
.1	OD75mm HDPE PN10	m	830		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
.1	DN65mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
_	following main pipe sizes				
.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
.1	OD75 female adapter	No.	2		

	e ID. 3.3: RWENTAMU IN LYANTONDE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				•
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
12.1	following pipe sizes Not exceeding DN200mm				
		m	14	1	

Region: West

BILL N	No. 2 : TRANSMISSION MAINS		. 3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
40.0	Pipe surrounds, of imported granular material, for the following pipe sizes		20		
12.2	Not exceeding DN200mm	m	30		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	35		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries	No.	Rate Only		
14	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection		I	l	
	Io. 2 : TRANSMISSION MAINS	T	1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

tem	lo. 4.3 : STORAGE RESERVOIR WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
•	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
•	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.3	DN65mm, PN10	No.	1		

Region: West

em	D	11.14	01	D ((110)	Amoun
lo.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
6	Landscaping and Walkways				•
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
5.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
3.1	Grade C15	m ³	2		
	Total Carried to Collection	<u> </u>		1	
	o. 3 : STORAGE RESERVOIR WORKS				
em lo.	Description	Unit	Qty.	Rate (UGx.)	Amour (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				

Region: West

ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	•	Oille	αιy.	rate (UUA.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
•	route, including felling trees, grabing tree stumps and disposal of	1.0111			
	arising materials.				
	DIDENADRA DIDEO				
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution				
2	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	1363		
2.2	OD75mm PN10	m	360		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	1		
	Unequal tees				
3.2	OD75 x 63mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	10		
	Total Carried to Collection				
BILL N	No.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				(000)
	Air Vaves				

Schem	e ID. 3.3: RWENTAMU IN LYANTONDE DISTRICT		Region:	West	
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	3		
7.2	DN50mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	10		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	18		
9	Invalves, posts for pipes, gate valves, all valves, washouts	111	10		
	Total Carried to Collection		1		
	Bill No. 4 Collection				
	Page 11				
	0 -				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary	l	1		
	·				

Region: West

Scheme ID. 3.4: MIRAMA IN NTUNGAMO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: West

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
2.1	Earthworks Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and	${\sf m}^3$	57		
	spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.				
2.2	Ditto but for the Intake Structure	m^3	34		
2.3	Excavation to form trapezoidal drain in marshy soils, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	175		
	Filling				
	Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufaturer's specifications	m^2	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m ²	840		

Region: West

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1.1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe and Heel	2			
6.2	200mm thick toe.	m ³	0.3		
6.3	200mm thick base slab.	m^3	2.4		
6.4	350/ 200mm thick reaining wall/ weir stem.	m^3	0		
6.5	200mm thick sump walls.	m^3	13.5		
6.6	200mm thick top slab.	m^3	1.2		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m^2	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m^2	140		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m^2	11		

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				, ,
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	1.2		
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	Rate Only		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Penstocks; hand operated including head stock and distance spindle, as				•
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	Pump Protection System				
10.3	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
	Valve Surface Boxes				
10.4	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	5.5kW Submersible Pump Set with 7.5kW Pumping Inverter with Data Module, rated flow Q = 15 m 3 /hr., rated head H = 75m total head; set to not more than $\underline{\bf 5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
	Total Carried to Collection				-

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0012D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	Total Carried to Collection				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		\(\frac{1}{2} - \frac{1}{2} \)
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the				
X2	following alignment: - Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
Х6а	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
	Total Carried to Collection				

Region: West

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the	No.	2		
	fence. Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		<u> </u>		
BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 1 Carried to Bill Summary				

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3.1 3.2 3.3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD63mm HDPE PN10 OD75mm HDPE PN10 OD90mm HDPE PN10	m m m	Rate Only 595 Rate Only		
	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings				
5 5.1	Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
6.1	following main pipe sizes DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD90 female adapter	No.	2		

Region: West

	Io. 2 : TRANSMISSION MAINS		1	,	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				, ,
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
10.1	Deput not exceeding 1.5ml	INO.	'		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
BILL N	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Surrounds			((UGx.)
	Pipe surrounds, of selected excavated granular material, for the				
				i I	

Schem	e ID. 3.4: MIRAMA IN NTUNGAMO DISTRICT		Region:	West	
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
40.4	0.1-0.2 m³, for the following pipe sizes	NI-	2		
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection				
	Bill No. 2 Collection				
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	Page 10				
	D. v. 44				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary				

Region: West

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 I.1	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring:-DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
5.3	DN65mm, PN10	No.	1		

	e ID. 3.4: MIRAMA IN NTUNGAMO DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	Io. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

Region: West

BILL N	Io.4 : DISTRIBUTION NETWORK		rtegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
-	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	460		
2.1	OD75mm PN10	m	498		
۷.۷		'''	430		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
	Flasuc Fipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	4		
	Unequal tees				
3.2	OD75 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
	riasuc ripe i iunigs				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	12		
	Total Carried to Collection				

Region: West

BILL N	10.4 : DISTRIBUTION NETWORK	•			
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	3		
7.2	DN50mm	No.	Rate Only		
•					
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	24		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary		1	1	

Region: West

Scheme ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	60		
2.5	Soft / decomposed rock soils	m ³	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m^3	10		

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT lo.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	vvest	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for the following structures: -				
5	Insitu Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
7	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval. Internal diameter; 1200mm	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Total Carried to Collection		1		

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT		Region:	West	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				
9	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size $1m \times 1m \times 1m$; including rockfill of size $100 - 250mm$; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection		<u> </u>		

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				,
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers				
	to match rating of panel offered)				
ME1	$5.5 kW$ Submersible Pump Set with $7.5 kW$ Pumping Inverter with Data Module, rated flow Q = $15 \text{ m}^3/\text{hr.}$, rated head H = 75m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0012D.	No.	1		
ME9	6mm ² Borehole drop cable,	m	5		
ME10	6mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
	Total Carried to Collection				

Region: West

NO.	Description	Unit		I	Amount
ЛЕ11а <i>А</i>	•	Oill	Qty.	Rate (UGx.)	(UGx.)
	Adapter box	No.	1		
	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
<u> </u>	Earthing and Lightening Protection				
r	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
r	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
<u>!</u>	MISCELLANEOUS WORKS				
X1 \	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the				
	following alignment: -				
X2 S	Straight or curved to a radius exceeding 12 m	m	70		

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	AACOL	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection		ı		
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary		•		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes: DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	370		
5 5.1	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.3	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters OD90 female adapter	No.	2		

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	WESL	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8 8.1	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified DN65mm	No.	1		
9	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
10.1	Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m	No.	1		
10.2	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths Depth not exceeding 1.5m	No.	1		
10.2	Reinstatement Roads	140.	1		
11	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	48		
12.1	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm	m	12		
	Total Carried to Collection				

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	sizes Not exceeding DN200mm	m	60		
40.0	Pipe surrounds, of mass concrete, for the following pipe sizes		0.5		
12.3	Not exceeding DN200mm	m	25		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
4.4	Other Pipework Ancillaries Marker Posts		20		
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection	<u> </u>			
BILL N	Io. 2 : TRANSMISSION MAINS	•			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	<u> </u>	l	1	

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	West	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				\
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
	Tollowing Holgin and roosivist sapasitios.				
2.1	Height; 9.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring:-				
4.1	DN65mm, PN10	No.	1		
4.1					
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	Total Carried to Collection				

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT		Region:	West	
	Io. 3 : STORAGE RESERVOIR WORKS	Unit	04.	Rate (UGx.)	Amazınt
Item 6	Description Landscaping and Walkways	Ullit	Qty.	Rate (UGX.)	Amount
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m^3	2		
	Total Carried to Collection		<u> </u>		
BILL N	Io. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(0 0111)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
_	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	398		
2.2	OD75mm PN10	m	495		
	PIPEWORK - FITTINGS AND VALVES				
	THEWORK-THINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	6		
3.2	OD63mm	No.	2		
3.3	Unequal tees OD75 x 63mm	No.	8		
3.3		INO.	0		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
_					
5 5.1	End caps OD63mm	No.	10		
J. I		INU.	10		
	Total Carried to Collection				
	rotal Carried to Collection				

	e ID. 3.5: KANYOGOGA IN SEMBABULE DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves				(COM)
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD75mm	No.	2		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	4		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm Other Pipework Ancillaries	No.	10		
9	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	22		
	Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	48		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary			1	

Region: West

Scheme ID. 3.6: RURAMA IN SHEEMA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 3.6: RURAMA IN SHEEMA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Landscaping				
2	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m² at Intake Site and 800m² at Pump Station.	m^2	1,050		
3	Reinforced concrete pipe support/ pedestal to detail as per Drawings	No.	2		
	MISCELLANEOUS METAL WORK Pump Protection System				
4.1	Diagonal pipe sleeve pump anti-vandal protection structure to detail as per Drawing No.OIS/NUC/SD/010	Item	1		
4.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawing No. OIS/NUC/SD/010	Item	1		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m² at Intake Site and 800m² at Pump Station.	m ²	1,050		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = 15 m³/hr., rated head H = 55m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
	Total Carried to Collection				

	e ID. 3.6: RURAMA IN SHEEMA DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PV Disconnect 1000-40-	No.	1		(/
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0009D.	No.	1		
ME9	4mm ² Borehole drop cable,	m	5		
ME10	4mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/NUC/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	Total Carried to Collection				

	e ID. 3.6: RURAMA IN SHEEMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	vvest	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				, ,
X1	Pump Protection System Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
Х9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				

	EID. 3.6: RURAMA IN SHEEMA DISTRICT	Region:		
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1 1	A
m	Description			Amoun
0.	·			(UGx.)
	DIII 4 0 II 4			
	Bill No. 1 Collection			
	Page 2			
	D 0			
	Page 3			
	D 4			
	Page 4			
	Total Bill No. 1 Carried to Bill Summar			

em					
No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route,	Item	1		
	including felling trees, grabing tree stumps and disposal of arising				
	materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches				
	to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	430		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to				
	PN 10, and of the following sizes				
5.1	DN75mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		

ILL N	e ID. 3.6: RURAMA IN SHEEMA DISTRICT o. 2 : TRANSMISSION MAINS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes				
	of the following sizes, all to PN10, include chamber as specified.				
8.1	DN65mm	No.	2		
9	Washouts				
	Washout as specified in the drawings, complete with plastic compression				
	pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone				
	masonry outfall structure and all other fittings necessary to make the				
	complete installation on pipes of the following sizes; all to PN10 including				
	valve surface box to detail.				
9.1	DN65mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of				
	the following depths				
0.1	Depth not exceeding 1.5m	No.	3		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover securely				
	attached to main body of surface box by chain or bolt, include down pipe,				
	complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	4		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the following				
	<u>pipe sizes</u>				
2.1	Not exceeding DN200mm	m	14		
	Total Carried to Collection				

	e ID. 3.6: RURAMA IN SHEEMA DISTRICT		Region:	West	
Item No.	o. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe sizes				, ,
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1- 0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection	<u> </u>		l	
	o. 2 : TRANSMISSION MAINS	1			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

	e ID. 3.6: RURAMA IN SHEEMA DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				<u> </u>
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex				
	Ltd. / Crest Tanks or any other approved complete with a lockable access				
	man ways, inlet/ riser, ball float valve, overflow with insect screen, float type				
	water level indicator and outlet/ down pipe with a strainer, washout and				
	overflow connection, including interconnecting pipe work and fittings, as				
	detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150 200 migrap union/ compression type close uDVC V. Serson Filter, non				
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe				
4	sizes, pressure ratings and supply of a pair of replacement screen element				
	and seal ring:-				
4.1	DN75mm, PN10	No.	1		
	ENT Onlini, T TVIC	110.	•		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring:-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

No. Description 6 Landscaping and Walkways 6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone No. Rate Only	Amount (UGx.)
6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone No. Rate Only	
excavated topsoil and preparation of surfaces. 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone No. Rate Only	
oil out A doc A docum product conditions from the participation of the conditions of	
method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	
7 Fences	
7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	
Gates	
7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the No. 1	
Provision and Placing of Concrete Ordinary Designed Mix Concrete	
Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:	
8.1 Grade C15 m ³ 2	
Total Carried to Collection	
BILL No. 3 : STORAGE RESERVOIR WORKS	
Item No. Description Unit Qty. Rate (UGx.)	Amount (UGx.)
Bill No. 3 Collection	
Page 10	
Page 11	
Total Bill No. 3 Carried to Bill Summary	

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route,	Item	1		
	including felling trees, grabing tree stumps and disposal of arising				
	materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	446		
2.2	OD75mm PN10	m	642		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.4	OD63mm	No.	4		
	Unequal tees				
3.7	OD75 x 63mm	No.	7		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps				
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	9		
6	Valves and Penstocks				
٠	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes				
	of the following sizes, all to PN10, include chamber as specified.				
0.0	0075				
6.3	OD75mm Total Carried to Collection	No.	2		
ILL N	No.4 : DISTRIBUTION NETWORK				
tem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Washouts			·	(UGx.)

Schem	e ID. 3.6: RURAMA IN SHEEMA DISTRICT		Region:	West	
	Washout as specified in the drawings, complete with plastic compression				
	pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all				
	other fittings necessary to make the complete installation on pipes of the				
	following sizes; all to PN10 including valve surface box and stone masonry				
	outfall structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	4		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	10		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	34		
DII I A	Total Carried to Collection				0
	Io. 4 : DISTRIBUTION NETWORK				A
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Dage 10				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID. 4.1: KABUMBA IN KABALE DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Scheme ID 41: KARLIMBA IN KARALE DISTRICT

ILL N	No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item			
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³			
2.2	Ditto but for the Intake Structure	m ³			
2.3	Excavation to form trapezoidal drain in marshy soils, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³			
	Filling				
	Structures Filling to precast concrete sump structure by methods specified and to depths				
3.1	as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³			
3.2	Imported murram.	m ³			
4	Single layer of geotextile laid to manufaturer's specifications	m ²			
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m² at Intake Site and 800m² at Pump Station.	m ²			

BILL N	e ID. 4.1: KABUMBA IN KABALE DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	11001	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				, ,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
6.1	Blinding 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1.1		
	Grade C25/10 Reinforced Concrete Base Slabs, Toe and Heel				
6.2	200mm thick toe.	m ³	0.3		
0.2	20011111 tiller toe.	III	0.5		
6.3	200mm thick base slab.	m ³	2.4		
6.4	350/ 200mm thick reaining wall/ weir stem.	m ³	0		
6.5	200mm thick sump walls.	m ³	13.5		
6.6	200mm thick top slab.	m ³	1.2		
	Formwork Formwork-Fair Finish				
	FOITIWOIN-FAII FIIIISII				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	140		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m^2	11		

ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Reinforcement				(UGx.)
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	1.2		
	Inserts				
8.2		No.	Rate Only		
	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.				
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	Rate Only		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	Penstocks; hand operated including head stock and distance spindle, as				(UGX.)
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high.	No.	1		
	MISCELLANEOUS METAL WORK Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729,	m	8		
10.1	complete andas shown in the drawings including fixing to precast concrete units	III	0		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	Pump Protection System				
10.3	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
	Valve Surface Boxes				
10.4	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
	,				
ME1	15.0kW Submersible Pump Set with 18.0kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 140m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	3x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 3x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		

ltem .	Scheme ID. 4.1: KABUMBA IN KABALE DISTRICT BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS					
ME4 PV Disconnect 1000-40-5 ME4 PV Disconnect 1000-40-3 ME5 PV Protect 1000-15, SPD x 1 on incoming solar PV. ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. ME7 PV Combiner ME7a Pressure Switch and Gauge - P6/12 ME8 Sinewave filter - SWAP0035D. ME9 16mm² Borehole drop cable, ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box ME11a Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	_		nit	Qty.	Rate (UGx.)	Amount (UGx.)
ME5 PV Protect 1000-15, SPD x 1 on incoming solar PV. ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. ME7 PV Combiner No. ME7a Pressure Switch and Gauge - P6/12 No. ME8 Sinewave filter - SWAP0035D. ME9 16mm² Borehole drop cable, ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11a Adapter box ME11b No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 GoW Solar security light and battery complete with 6m steel pole and lockable No. ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	-4)-5 N	No.	1		(0 000)
ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. ME7 PV Combiner No. ME7a Pressure Switch and Gauge - P6/12 No. ME8 Sinewave filter - SWAP0035D. No. ME9 16mm² Borehole drop cable, ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors No. ME11 Adapter box No. ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	-4)-3 N	No.	1		
etc. ME7 PV Combiner No. ME7a Pressure Switch and Gauge - P6/12 No. ME8 Sinewave filter - SWAP0035D. ME9 16mm² Borehole drop cable, ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors No. ME11a Adapter box No. ME11b Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	S	PD x 1 on incoming solar PV.	No.	1		
ME7a Pressure Switch and Gauge - P6/12 No. ME8 Sinewave filter - SWAP0035D. No. ME9 16mm² Borehole drop cable, ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. m ME10a 6mm² UV Single Cable. m ME11 Wire kit array from solar array to controller with MC4 connectors No. ME11a Adapter box No. ME11a Adapter box No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	/i	es - SPDs for all; Pressure Sensors, Low Water Level	em	1		
ME8 Sinewave filter - SWAP0035D. ME9 16mm² Borehole drop cable, ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11a Wire kit array from solar array to controller with MC4 connectors ME11a Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.		N	No.	1		
ME10 16mm² Borehole drop cable, 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box No. ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	(auge - P6/12	No.	1		
ME10 16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box No. ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	4	0035D.	No.	1		
ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11a Adapter box No. ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	р	cable,	m	5		
ME11 Wire kit array from solar array to controller with MC4 connectors No. ME11a Adapter box No. ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	e	Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	ole		m	90		
Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	ol	r array to controller with MC4 connectors	No.	3		
No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.		N	No.	1		
Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.			em	1		
manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	er	ng Protection				
manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME15 60W Solar security light and battery complete with 6m steel pole and lockable No.	ρ	per electrodes and all accessories to attain an earth	um	1		
, , , , , , , , , , , , , , , , , , , ,	ρp	per electrodes and all accessories to attain an earth	um	1		
	g	t and battery complete with 6m steel pole and lockable	No.	5		
Total Carried to Collection		T. (10.) 11. 0 !! !!				

	IE ID. 4.1: KABUMBA IN KABALE DISTRICT No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Alarm System				, ,
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	295		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Total Carried to Collection			1	

BILL N	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		_		
Item No.	Description				Amount (UGx.)
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
BILL N	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 1 Carried to Bill Summary	<u> </u>	1	<u> </u>	

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3 3.1 3.2	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN16 OD90mm HDPE PN16	m m	Rate Only 555		
4	uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
4.1	OD110 to PN 16 Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings				
5	Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN75mm	No.	4		

No. Description Unit Qty. Rate (UGx.) Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters OD90 female adapter No. 2 8 Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 9 Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		No. 2 : TRANSMISSION MAINS		I	<u> </u>	
6 Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes 6.1 DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters 7.1 OD90 female adapter No. 2 8 Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified Iflanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters OD90 female adapter No. 2 Valves and Penstocks Air Valves Flanged Cl double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		Bulk Flow Meters				
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8. Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 9. Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8 Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths	7	Equal Adapters				
Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. B.1 DN75mm No. 2 Washouts Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths	7.1	OD90 female adapter	No.	2		
Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths	8	Valves and Penstocks				
flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. DN75mm No. 2 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		<u>Air Valves</u>				
flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 8.1 DN75mm No. 2 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. 9.1 DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		Flanged CI double orifice air relief valve, DN50mm, as specified				
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chamber as specified. DN75mm No. 2 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		the installation on pipes of the following sizes, all to PN10, include				
9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths						
Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. 9.1 DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths	8.1	DN75mm	No.	2		
compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths	9	Washouts				
compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		Washout as specified in the drawings, complete with plastic				
valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths						
9.1 make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths						
9.1 PN10 including valve surface box to detail. DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths						
9.1 DN75mm No. 3 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths						
Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths	9.1		No.	3		
Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths		PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
of the following depths						
of the following depths		Masonry air valve chamber, complete as specified in the drawings, and				
	10.1		No.	3		

	e ID. 4.1: KABUMBA IN KABALE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
44	for the following pipe sizes		0.4		
11	Not exceeding DN300mm	m	24		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
40.4	following pipe sizes		20		
12.1	Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	40		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection	1			
	Bill No. 2 Collection				
	Page 9				
	Page 10				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary				

BILL N	lo. 4.3 : STORAGE RESERVOIR WORKS		-		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 1.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
•	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	Total Carried to Collection		<u> </u>	<u> </u>	

Scheme ID. 4.1: KABUMBA IN KABALE DISTRICT

	e ID. 4.1: KABUMBA IN KABALE DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m ³	2		
	Total Carried to Collection		<u>I</u>		
BILL N	Io. 3 : STORAGE RESERVOIR WORKS			l	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 13				
	Page 14				
	Total Bill No. 3 Carried to Bill Summary		1		

Scheme ID. 4.1: KABUMBA IN KABALE DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount
NO.	DEMOLITION AND SITE CLEARANCE				(UGx.)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	220		
2.2	OD75mm PN16	m	415		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	1		
3.2	OD63mm	No.	4		
	Unequal tees				
3.3	OD75 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	6		
	Total Carried to Collection	<u> </u>	<u> </u>	<u> </u>	

Scheme ID. 4.1: KABUMBA IN KABALE DISTRICT

-	IE ID. 4.1: KABUMBA IN KABALE DISTRICT No.4 : DISTRIBUTION NETWORK		Region:	vvest	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.3	OD75mm	No.	Rate Only		
6.4	OD63mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	3		
7.2	DN50mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	6		
0.1		110.			
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	22		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	12		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT

BILL SUMMARY

Bill	Description	Amount (UGx.)
No.		
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	General Site Clearance		•	1	(UGx.)
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	520		
2.2	Ditto but in marshy soils	m^3	296		
2.3	Ditto but in soft / decomposed rock soils	m^3	136		
2.4	Excavation to form trapezoidal drain in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	175		
2.5	Ditto but in marshy soils	m^3	130		
2.6	Ditto but in soft / decomposed rock soils	m ³	85		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
0.4	as shown in the drawings with the following materials: -	3	Data Oak		
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	Rate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	Rate Only		
4	Single layer of geotextile laid to manufaturer's specifications	m^2	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m ² at Intake Site and 800m ² at Pump Station.	m ²	840		

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.05kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Total Carried to Collection				

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				, ,
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection	•		·	

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amoun
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
BILL Note the second se	lo. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description				Amoun
-	Bill No. 1 Collection				()
	Page 2				
	Page 3				
	Page 4				
	Page 5 Total Bill No. 1 Carried to Bill Summary				

em No.	o. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
					(00)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	500		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	DN75mm	No.	4		
6	Bulk Flow Meters				
U	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN75mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
			I -	1	

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				,
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes			1	
11	Not exceeding DN300mm	m	12		
	Total Carried to Collection				

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				,
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
	Strain in the second of the se				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
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	Total Carried to Collection		ı		
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.5	Height; 1.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.3	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	I CONTIONAL I	1	1	1	
5.3	[OPTIONAL] DN65mm, PN10	No.			

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
•	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
	following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	Io. 3 : STORAGE RESERVOIR WORKS	1		T	
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	Bill No. 3 Collection				
	Page 9				
	Page 10				
	Tatal Dill No. 0.0 amile J.t. Dill 0		<u> </u>		
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
_	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	187		
2.2	OD75mm PN10	m	298		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
	Unequal tees				
3.3	OD90 x 75mm	No.	Rate Only		
3.4	OD90 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	-				
4 4.1	Couplers OD75mm	No.	Rate Only		
4.1	OD63mm	No.	Rate Only		
2		140.			
5	End caps				
5.1	OD63mm	No.	2		
	Total Carried to Collection	<u> </u>			

	e ID. 4.2: NYARUHUNGYE IN KANUNGU DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				, ,
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	15		
	7.110.111.011.11				
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID. 4.3: BUGARA IN KISORO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 4.3: BUGARA IN KISORO DISTRICT No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism silt basin and reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	1555		
2.2	Soft / decomposed rock soils	m^3	30		
2.4	Marshy soils	m ³	150		
2.5	Soft / decomposed rock soils	m ³	6		
	Landscaping				
4	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m ²	2,725		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers				
	to match rating of panel offered)				
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = 15 m 3 /hr., rated head H = 55m total head; set to not more than $\underline{\bf 5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
	Total Carried to Collection	<u>-</u>			

RILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-1	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0009D.	No.	1		
ME9	4mm ² Borehole drop cable,	m	5		
ME10	4mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		

ltore	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amat
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
Х6а	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	130		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		

	ne ID. 4.3: BUGARA IN KISORO DISTRICT No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	
Item				Amount
No.	Description			(UGx.)
	<u>Gates</u>			
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2	
	Training of Operator's staff			
X8	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1	
	Operation and Maintenance Manuals			
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1	
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only	
	Stone Pitching.			
XXX	250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m ²	125	
	Total Carried to Collection			
	Bill No. 1 Collection			
	Page 2			
	Page 3			
	Page 4			
	Page 5			
	Total Bill No. 1 Carried to Bill Summary			

ILL N	Io. 2 : TRANSMISSION MAINS		-		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	250		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
C 4	following main pipe sizes	NI.	4		
6.1	DN65mm PN10	No.	'		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
	Total Carried to Collection		<u> </u>		

	e ID. 4.3: BUGARA IN KISORO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN65mm	No.	2		
10.1	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths		·		
10.2	Depth not exceeding 1.5m Reinstatement Roads	No.	2		
11	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	12		
	Total Carried to Collection				

	e ID. 4.3: BUGARA IN KISORO DISTRICT No. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				,
	Pipe surrounds, of selected excavated granular material, for the				
40.4	following pipe sizes		4.4		
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	30		
40.0	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Binaryark Anaillaries				
	Other Pipework Ancillaries Marker Posts				
14	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	The state of pipes, gate tarres, an interest, manifest				
	Total Carried to Collection	•	•		
	No. 2 : TRANSMISSION MAINS	T	T	T T	A a
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary		<u>I</u>	1	

	e ID. 4.3: BUGARA IN KISORO DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
1	General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 1.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 4.1	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:-				
5.2	[OPTIONAL] DN75mm, PN10	No.	1		

	e ID. 4.3: BUGARA IN KISORO DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				, ,
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
	following grades:	2			
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	lo. 3 : STORAGE RESERVOIR WORKS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
	Bill No. 3 Collection				
	Page 19				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary		<u> </u>		

	e ID. 4.3: BUGARA IN KISORO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	359		
2.2	OD75mm PN10	m	339		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	4		
	Unequal tees				
3.2	OD75 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
_					
5 5.1	End caps OD63mm	No.	12		
J. I		INU.	12		
	Total Carried to Collection	<u> </u>	ı		

	e ID. 4.3: BUGARA IN KISORO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.		Data Oak		
	OD75mm	No.	Rate Only		
6.2	OD63mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
	DN65mm	No.	2		
7.4	DN50mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
	Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	24		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	12		
	Total Carried to Collection	·	1		
	Bill No. 4 Collection				
	Page 14				
	Page 15				

Region: West

Scheme ID. 4.4: KYONDO IN RUKIGA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
140.	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism silt basin and reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	1555		
2.2	Soft / decomposed rock soils	m^3	30		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 3.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	150		
2.5	Soft / decomposed rock soils	m ³	6		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore, hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	44		
3.3	Imported murram.	m^3	18		
4	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m^2	2,725		

Region: West

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				, ,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel	•			
5.2	200mm thick key and toe.	m ³	2.5		
5.3	200mm thick base and heel slabs.	m^3	5		
5.4	500/ 200mm thick retaining wall/ weir stem.	m^3	19.0		
5.5	200mm thick sump walls.	m^3	41		
5.6	200mm thick top slab.	m^3	1.2		
	Formwork				
	Formwork-Fair Finish				
6.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.5		
	Fair Finish Plane Vertical				
6.2	Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m^2	145		
	Finishing of top surfaces				
6.3	Steel trowel finishing of top surfaces.	m^2	20		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement Deformed High Yield Steel				
7.1	High yield square twisted bars to BS 4449 and of the following sizes Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
8.2	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
8.3	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	ELECTRO-MECHANICAL WORKS				
ME1	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 22 m³/hr., rated head H = 75m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-5	No.	1		
ME5	PV Protect 1000-125	No.	Rate Only		
ME6	PV Combiner	No.	1		

Region: West

BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS						
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
ME4	PV Disconnect 1000-40-2	No.	1			
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1			
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level	Item	1			
ME7	PV Combiner	No.	1			
ME7a	Pressure Switch and Gauge - P5/8	No.	1			
ME8	Sinewave filter - SWAP0022D.	No.	1			
ME9	10mm ² Borehole drop cable,	m	5			
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100			
ME10a	6mm² UV Single Cable.	m	60			
	Wire kit array from solar array to controller with MC4 connectors	No.	2			
ME11a	Adapter box	No.	1			
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1			
	Earthing and Lightening Protection					
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1			
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1			
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5			
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1			
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1			
	Total Carried to Collection					

Region: West

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	T		·	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	130		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection			İ	

Region: West

BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		region.	11031	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
XXX	Stone Pitching. 250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m²	125		
	Total Carried to Collection				
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

Region: West

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only 12		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN10 PIPEWORK - FITTINGS AND VALVES	m	350		
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to DN75mm	No.	4		
6 6.1	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN75mm PN10	No.	1		
0.1	PN16 HDPE Compression fitting to DIN 8074/BS 5114	110.	·		
7 7.1	Equal Adapters OD90 female adapter	No.	2		

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				,
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	2		
	DIDENACDIZ MANUOLES AND DIDENACDIZ ANCILLADIES				
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
			,		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	36		
• •		•••			
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	1		1	1	

Region: West

	lo. 2 : TRANSMISSION MAINS		Region.	11031	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
40.0	Sizes		40		
12.2	Not exceeding DN200mm	m	40		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	25		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Binawark Anaillaria				
	Other Pipework Ancillaries Marker Posts				
14	Marker rosts Marker posts for pipes, gate valves, air valves, washouts	nr	16		
	manus posts or pipos, gane rainos, am rainos, masiloste				
	Total Carried to Collection	·			0
	o. 2 : TRANSMISSION MAINS	1	1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pill No. 0 Callandian				. , ,
	Bill No. 2 Collection				
	Page 8				0
	Page 9				0
	Dage 10				0
	Page 10				0
	Total Bill No. 2 Carried to Bill Summary				

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				,
	General Site Clearance				
4	General site slearance including trees, stumps and disposal of arising	Item	1		
1	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 1.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	1		1	1	

Region: West

ltem					Amoun
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	$500 \times 500 \times 50$ mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
	orumary besigned mix controle				
	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m^3	2		
	Total Carried to Collection				
ILL N	lo. 3 : STORAGE RESERVOIR WORKS				
tem	Description	Unit	Qty.	Rate (UGx.)	Amoun
	·				
	Bill No. 3 Collection				
	Page 11				
	Page 12				

Region: West

BILL N	Io.4 : DISTRIBUTION NETWORK		3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	176		
2.2	OD75mm PN10	m	282		
	PIPEWORK - FITTINGS AND VALVES				
	DNAO UDDE O				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	2		
	Unequal tees	١			
3.2	OD75 x 63mm	No.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
5	End caps				
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
	Total Carried to Collection	<u> </u>	<u> </u>		
	. Ottal Garried to Golicotton				

Region: West

Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.)	BILL N	Io.4 : DISTRIBUTION NETWORK		. 3		
Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm No. 1 7 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm No. DN75mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 10 Not exceeding DN300mm m M 36		Description	Unit	Qty.	Rate (UGx.)	
Flanged CI double orifice air relief valve, DN50mm, as specified, flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. OD75mm No. 1 **Mashouts** Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. DIS/NUC/SD/004. 7.1 DN75mm No. DN75mm No. DN65mm No. **Farm Gate Connections** Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. **Other Pipework Ancillaries** **Marker Posts** Marker Posts** Marker posts for pipes, gate valves, air valves, washouts nr 23 **Reinstatement** **Roads** Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes** 10 Not exceeding DN300mm mm 36	6	Valves and Penstocks				
to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm No. 1 7 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 10 Not exceeding DN300mm m 36		Air Vaves				
adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm No. 1 **Mashouts** Washouts** Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm No. 1 **Rate Only No. 1 **R		Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
installation on pipes of the following sizes, all to PN10, include chamber as specified. OD75mm No. 1 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
6.1 OD75mm No. 1 7 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings: tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm No. DN65mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10:- 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 10 Not exceeding DN300mm m 36		adaptors, distance pieces, and all fittings necessary to make the				
6.1 OD75mm No. 1 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm 7.2 DN75mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 10 Not exceeding DN300mm m 36		installation on pipes of the following sizes, all to PN10, include chamber				
Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm 7.2 DN85mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36						
Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm 7.2 DN65mm No. Table Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	6.1	OD75mm	No.	1		
compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm 7.2 DN75mm DN65mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	7	Washouts				
flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm 7.2 DN65mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker Posts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		Washout as specified in the drawings, complete with plastic				
installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN75mm 7.2 DN65mm 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. DN75mm DN65mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		flap valve and all other fittings necessary to make the complete				
7.1 DN75mm		installation on pipes of the following sizes; all to PN10 including valve				
7.1 DN75mm DN65mm No. Rate Only No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		surface box and stone masonry outfall structure to detail as per Drawing				
7.2 DN65mm No. 1 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		No. OIS/NUC/SD/004.				
Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	7.1	DN75mm	No.	Rate Only		
Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	7.2	DN65mm	No.	1		
distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	8	Farm Gate Connections				
complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		Make DN50mm Irrigation Water Supply Hydrant connection to the				
Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts nr 23 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		distribution main, inclusive of PVC compressive ball valve and end cap				
PN10: - DN50mm No. 6 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm No. 6 Reinstatement array array array and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		complete with connector pipes and locakable chamber as detailed on				
8.1 DN50mm No. 6 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		PN10: -				
Marker Posts Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	8.1	DN50mm	No.	6		
9 Marker posts for pipes, gate valves, air valves, washouts Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		Other Pipework Ancillaries				
Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		Marker Posts				
Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36	9	Marker posts for pipes, gate valves, air valves, washouts	nr	23		
Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 36		Reinstatement				
10 Not exceeding DN300mm m 36		Roads				
10 Not exceeding DN300mm m 36						
		for the following pipe sizes		1		
Total Carried to Collection	10	Not exceeding DN300mm	m	36		
		Total Carried to Collection	<u> </u>		<u> </u>	

Region: West

tem No.		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 13				
	Page 14				

Scheme ID. 4.5: RUNKONKOMA IN RUKUNGIRI DISTRICT Region: West BILL SUMMARY

Bill No.	Description Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Camind to Const 1 2	
	Total Carried to Grand Summary	

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				(OOXI)
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m^3	45		
2.3	Ditto but for the River Weir Structure	m^3	3.5		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore, hand packed or compacted by the arm of an excavator.	m^3	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m²	840		

	e ID. 4.5: RUNKONKOMA IN RUKUNGIRI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	vvesi	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				•
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
5.1	Blinding 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m ³	1		
J. I	of the following thickness	m [*]	'		
	Grade C25/10				
- 0	Reinforced Concrete Base Slabs, Toe, Key and Heel	2	0.5		
5.2	200mm thick key and toe.	m ³	2.5		
5.3	200mm thick base and heel slabs.	m ³	5		
5.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19.0		
5.5	200mm thick sump walls.	m ³	41		
5.6	200mm thick top slab.	m ³	1.2		
	Formwork				
	Formwork-Fair Finish				
6.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.5		
	Fair Finish Plane Vertical				
6.2	Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	145		
	Finishing of top surfaces				
6.3	Steel trowel finishing of top surfaces.	m^2	20		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
7.1	Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK				
	Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
	Pump Protection System				
8.2	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
	Access Manhole Cover				
8.3	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 25 m^3 /hr., rated head H = 100m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-5	No.	1		
ME5	PV Protect 1000-125	No.	Rate Only		
ME6	PV Combiner	No.	1		

No. Descrip ME4 PV Disco ME5 PV Prote	onnect 1000-40-2 ect 1000-15, SPD x 1 on incoming solar PV. rotection Devices - SPDs for all; Pressure Sensors, Low Water Level	Unit No. No. Item	Qty. 1	Rate (UGx.)	Amount (UGx.)
ME4 PV Disco ME5 PV Prote ME6 Surge Pro	ect 1000-15, SPD x 1 on incoming solar PV. rotection Devices - SPDs for all; Pressure Sensors, Low Water Level	No.			
ME6 Surge Pro	rotection Devices - SPDs for all; Pressure Sensors, Low Water Level		1	1 1	
		Item	'		
ME7 PV Comb	biner		1		
		No.	1		
ME7a Pressure	Switch and Gauge - P6/12	No.	1		
ME8 Sinewaye	e filter - SWAP0022D.	No.	1		
ME9 16mm ² B	Borehole drop cable,	m	5		
ME10 16mm² 3	-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a 6mm² UV	/ Single Cable.	m	60		
ME11 Wire kit a	array from solar array to controller with MC4 connectors	No.	2		
/IE11a Adapter t	box	No.	1		
	echanical control fittings as detailed on the Pump House Drawings PH/001 - Sheets 3 & 4 of 4.	Item	1		
Earthing	and Lightening Protection				
manhole	at solar array and borehole installation by 16mm2 PVC-I cable in a with pure copper electrodes and all accessories to attain an earth se of less than 1 ohm	Sum	1		
manhole	at solar array and borehole installation by 16mm2 PVC-I cable in a with pure copper electrodes and all accessories to attain an earth se of less than 1 ohm	Sum	1		
ME15 60W Sola battery be	ar security light and battery complete with 6m steel pole and lockable ox	No.	5		
ME16 Alarm Sy GMS Ala per array	arm System complete with 1No. alarm horn and 2No.vibration sensors	Item	1		
	arm System complete with 1No. alarm horn and 1No.vibration sensor ump protection as instructed by the Engineer.	Item	1		

ltem	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			_ , ,,,,,	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	130		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

Region: West

em lo.	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2 3	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m HDPE Pipes	m m	Rate Only 12		
3.1	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN10	m	380		
4 4.1	uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 Depth not exceeding 1.5m PIPEWORK - FITTINGS AND VALVES	m	Rate Only		
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN75mm	No.	4		
	Total Carried to Collection				

Region: West

	Io. 2 : TRANSMISSION MAINS		1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN75mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Total Carried to Collection				

Region: West

BILL N	Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes	'''	00		
12.3	Not exceeding DN200mm	m	2		
	, and the second				
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection				
	Bill No. 2 Collection				
	Page 8				
	aye o				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary				

	lo. 4.3 : STORAGE RESERVOIR WORKS		ı	,	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
	Tollowing noight and reservior supusitios.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring:-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	Total Carried to Collection		1		

Region: West

excavated topsoil and preparation of surfaces.	D	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. 7 Fences 7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. Gates 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete Ordinary Designed Mix Concrete BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Grade C15 m³ 2 Total Carried to Collection Bill No. 3 Collection Page 11	L	Landscaping and Walkways				
Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. Fences 7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. Gates 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: 8.1 Grade C15 Total Carried to Collection Page 11			m ²	150		
7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. Gates 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete Besigned mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Grade C15 Total Carried to Collection Bill No. 3 Collection Page 11	S	Stone method" between the gate, pump house and solar array in one	No.	Rate Only		
7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. Gates 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete Besigned mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Grade C15 Total Carried to Collection Bill No. 3 Collection Page 11	F	Fences				
7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: 8.1 Grade C15 Total Carried to Collection Bill No. 3 Collection Page 11	G	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw	m	60		
the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete Besigned mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: 8.1 Grade C15 Total Carried to Collection Bill No. 3 Collection Page 11						
8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: 8.1 Grade C15 Total Carried to Collection Bill No. 3 Collection Page 11			No.	1		
8.1 BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades: Grade C15 m³ 2 Total Carried to Collection Bill No. 3 Collection Page 11						
8.1 Grade C15 Total Carried to Collection Bill No. 3 Collection Page 11	В	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
Bill No. 3 Collection Page 11		= =	m ³	2		
Bill No. 3 Collection Page 11		Total Carried to Collection				
Page 11		Total Carried to Collection				
		Bill No. 3 Collection				
Page 12		Page 11				
		Page 12				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	90		
2.2	OD75mm PN10	m	721		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.3	OD75mm	No.	1		
3.4	OD63mm	No.	1		
	<u>Unequal tees</u>		_		
3.8	OD75 x 63mm	No.	8		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	10		

Region: West

BILL I	No.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	1		
6.2	OD63mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	4		
7.2	DN50mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	10		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	36		
	Total Carried to Collection				
	Bill No. 4 Collection				<u> </u>
	Page 15				
	Page 16				
	Total Bill No. 4 Carried to Bill Summary				

Region: West

211	 INANA	ARY
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Bill	UMMARY	
No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
-	Total Carried to Grand Summary	

ILL N	e ID. 4.6: NYAMASIZI IN RUBANDA DISTRICT No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amoun (UGx.)
	General Site Clearance				, ,
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism silt basin and reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	1555		
2.2	Soft / decomposed rock soils	m^3	30		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 3.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	150		
2.5	Soft / decomposed rock soils	m ³	6		
	Landscaping				
4	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m² at Intake Site and 800m² at Pump Station.	m^2	2,725		
	Total Carried to Collection				

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				(0 0 111)
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding	2			
5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel	2			
5.2	200mm thick key and toe.	m ³	2.5		
5.3	200mm thick base and heel slabs.	m^3	5		
5.4	500/ 200mm thick retaining wall/ weir stem.	m^3	19.0		
5.5	200mm thick sump walls.	m^3	41		
5.6	200mm thick top slab.	m^3	1.2		
	Formwork				
	Formwork-Fair Finish				
6.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering	m^2	4.5		
	and / or filleting of all exposed concrete corners.				
	Fair Finish Plane Vertical				
6.2	Plane fair finish vertical and / or slightly soping formwork to walls including	m^2	145		
	charmfering and / or filleting of all exposed concrete corners.				
	Finishing of top surfaces				
6.3	Steel trowel finishing of top surfaces.	m^2	20		
	1		l	1	

Region: West

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				, ,
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
7.1	Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK				
	Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
	Pump Protection System				
8.2	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	1		
	Access Manhole Cover				
8.3	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers				
	to match rating of panel offered)				
ME1	9.2kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 15 m 3 /hr., rated head H = 140m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-5	No.	1		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PV Disconnect 1000-40-2	No.	1		• •
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
	Total Carried to Collection				

BILL No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amoun (UGx.)
E17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		(00%.)
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
(6а	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	130		
(6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		

Scheme ID. 4.6: NYAMASIZI IN RUBANDA DISTRICT	Region:	West
Conomic IDI 410. INTIMINALE IN INCODANTO IN CONTROL	itegion.	

Ochich	E ID. 4.0. INTAMASIZI IN NODANDA DISTRICT		Region.	MESI	
Item	Description				Amount
No.					(UGx.)
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
	Operation and Maintenance Manuals				
Х9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
xxx	Stone Pitching. 250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m²	125		
	Total Carried to Collection				
	10. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary	<u> </u>	<u> </u>	1	
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Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1 2.2	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN16	m	480		
5	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends				
5.1	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as				
6.1	specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN50mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD75 female adapter	No.	2		
1.1	Total Carried to Collection	INO.		<u> </u>	

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include				
8.1	chamber as specified. DN65mm	No.	1		
9	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN65mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
10.1	Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover_ securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement Roads				
11	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	12		
	Total Carried to Collection				

Region: West

No. Description Unit Qty. Rate (UGx.) (UCX.) Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm m 14 Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm m 30 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 2 12.3 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 20 BILL No. 2: TRANSMISSION MAINS	
Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm m 14 Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm m 30 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 2 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 20 BILL No. 2 : TRANSMISSION MAINS	ount 3x.)
following pipe sizes Not exceeding DN200mm Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 2 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes 13.1 Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
12.1 Not exceeding DN200mm m 14 Pipe surrounds, of imported granular material, for the following pipe sizes 12.2 Not exceeding DN200mm m 30 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 2 13 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts nr 20 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
Pipe surrounds, of imported granular material, for the following pipe sizes 12.2 Not exceeding DN200mm m 30 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 2 13 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes 13.1 Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts nr 20 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
12.2 Not exceeding DN200mm m 30	
Sizes Not exceeding DN200mm m 30	
12.2 Not exceeding DN200mm m 30 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 2 13.1 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts nr 20 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
12.3 Not exceeding DN200mm m 2 13 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts nr 20 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
12.3 Not exceeding DN200mm m 2 13 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. 2 Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts nr 20 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
13.1 Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
13.1 Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
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Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
14 Marker posts for pipes, gate valves, air valves, washouts nr 20 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	
BILL No. 2 : TRANSMISSION MAINS	
Itam Description	
Item Description Unit Qty. Rate (UGx.) Amo	ount
Bill No. 2 Collection	
Page 8	
Page 9	
Page 10	
Total Bill No. 2 Carried to Bill Summary	

m Description DEMOLITION AND SITE CLEARANCE General Site Clearance	Unit	04		
· · · · · · · · · · · · · · · · · · ·	1	Qty.	Rate (UGx.)	Amount (UGx.)
General site slearance including trees, stumps and disposal of arising materials.	Item	1		
Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.	-			
Height; 1.0m for (4No. x 10m ³ Tanks)	No.	1		
Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
1 10m ³	No.	4		
150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring:-				
1 DN65mm, PN10	No.	1		
150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring:- [OPTIONAL]				
DN65mm, PN10	No.	1		

Region: West

	Io. 3 : STORAGE RESERVOIR WORKS		Region.	11031	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	Io. 3 : STORAGE RESERVOIR WORKS			'	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

Region: West

	Io.4 : DISTRIBUTION NETWORK	П	T	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1 2.2	OD63mm PN6 OD75mm PN6	m m	60 150		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1 3.2	OD75mm OD63mm	No. No.	3 Rate Only		
0.2		110.	ĺ		
3.3	Unequal tees OD75 x 63mm	No.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps		D		
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	6		
	Total Carried to Collection	<u> </u>	<u> </u>	<u> </u>	

e ID. 4.6: NYAMASIZI IN RUBANDA DISTRICT o.4: DISTRIBUTION NETWORK		Region:	vvest	
Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Valves and Penstocks				, ,
Air Vaves				
Flanged CI double orifice air relief valve, DN50mm, as specified				
flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
flange adaptors, distance pieces, and all fittings necessary to make				
the installation on pipes of the following sizes, all to PN10, include				
chamber as specified.				
OD75mm	No.	1		
OD63mm	No.	Rate Only		
Washouts				
Washout as specified in the drawings, complete with plastic				
compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
flap valve and all other fittings necessary to make the complete				
installation on pipes of the following sizes; all to PN10 including valve				
surface box and stone masonry outfall structure to detail as per				
Drawing No. OIS/NUC/SD/004.				
DN65mm	No.	2		
DN50mm	No.	1		
Farm Gate Connections				
Make DN50mm Irrigation Water Supply Hydrant connection to the				
distribution main, inclusive of PVC compressive ball valve and end				
cap complete with connector pipes and locakable chamber as detailed				
on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
to PN10: -				
DN50mm	No.	6		
Other Pipework Ancillaries				
Marker Posts				
Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection	nr	16		
Total Carried to Collection				
Bill No. 4 Collection				
Page 13				
Page 14				
	-	Page 14	Page 14	Page 14

Scheme ID. 5.1: KYAKUHANDA IN BUHWEJU DISTRICT Region: West BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

Region: West

Scheme ID. 5.1: KYAKUHANDA IN BUHWEJU DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form trapezoidal prism silt basin and reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils	${\sf m}^3$	1555		
2.2	Soft / decomposed rock soils	m^3	30		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 3.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	150		
2.5	Soft / decomposed rock soils	m^3	6		
	Landscaping				
4	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m² at Intake Site and 800m² at Pump Station.	m^2	2,725		
	Total Carried to Collection				

Region: West

N-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete Designed mix. concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures:- Grade C15/10 Billinding Simm thick bilinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick base and heel slabs. m³ 2.5	Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Ordinary Design Mix Concrete Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: - Grade C15/10 Billinding 5.11 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. 5.2 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. 8. Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS Total Carried to Collection Reinforcement		IN-SITU CONCRETE				`
Designed mix concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures:: Grade C15/10 Blinding 5.1 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. m³ 2.5 3. 200mm thick base and heel slabs. m³ 5 6 5.4 S00/200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement		Provision and Placing of Concrete				
cement to BS 12, aggregate to BS 882 for the following structures:- Grade C15/10 Bilinding 5.1 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. Total Carried to Collection Total Carried to Collection Bill No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement		Ordinary Design Mix Concrete				
Grade C15/10 Blinding 5.1 50mm thick blinding concrete, for base slabs, toes, key and heel: grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. 5.2 200mm thick base and heel slabs. 6.3 200mm thick retaining wall/ weir stem. 6.4 500/200mm thick retaining wall/ weir stem. 6.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Paiar Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vortical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement						
Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel		cement to BS 12, aggregate to BS 882 for the following structures: -				
5.1 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick way and toe. m³ 2.5 5.3 200mm thick base and heel slabs. m³ 5 5.4 500/ 200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 5.6 200mm thick top slab. m³ 1.2 Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. m² 20 Total Carried to Collection BILL No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement		Grade C15/10				
of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement		Blinding				
Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. m³ 2.5 3. 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Fair Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement	5.1		m ³	1		
5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick sump walls. 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement						
5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. m² 20 Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement		_				
5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (U	5.2	200mm thick key and toe.	m ³	2.5		
5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (U	5.3	200mm thick base and heel slabs.	m ³	5		
Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (U	5.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19.0		
Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.)	5.5	200mm thick sump walls.	m ³	41		
Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (U	5.6	200mm thick top slab.	m ³	1.2		
Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (U		Formwork				
Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (I		Formwork-Fair Finish				
and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces 6.3 Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Pescription Reinforcement Unit Qty. Rate (UGx.) Ar (L	6.1					
Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Ar (L			m ²	4.5		
charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Reinforcement Unit Qty. Rate (UGx.) Reinforcement		Fair Finish Plane Vertical				
6.3 Steel trowel finishing of top surfaces. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Description Reinforcement Unit Qty. Rate (UGx.) (I	6.2		m ²	145		
Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Description Unit Qty. Rate (UGx.) (I		Finishing of top surfaces				
BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item Description Unit Qty. Rate (UGx.) (I	6.3	Steel trowel finishing of top surfaces.	m ²	20		
Item No. Description Unit Qty. Rate (UGx.) Ar (I			1	1		
Reinforcement	Item		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	110.	Reinforcement			+	(304.)
Deformed High Vield Steel		Deformed High Yield Steel				

Schem	e ID. 5.1: KYAKUHANDA IN BUHWEJU DISTRICT		Region:	West	
7.1	High yield square twisted bars to BS 4449 and of the following sizes Nominal size, 12mm	t	2.0		
8.1	MISCELLANEOUS METAL WORK Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
8.2	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	1		
8.3	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
ME1	ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 15 m³/hr., rated head H = 100m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
	Total Carried to Collection				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		,
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				, ,
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	130		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Cartes				
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

Region: West

BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		rtegion.	
Item No.	Description			Amount (UGx.)
XXX	Stone Pitching. 250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m²	125	
	Total Carried to Collection			
	Bill No. 1 Collection			
	Page 2			
	Page 3			
	Page 4			
	Page 5			
	Total Bill No. 1 Carried to Bill Summary			

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline	Item	1		
•	route, including felling trees, grabing tree stumps and disposal of arising materials.	110111			
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1 2.2	DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
3.1	trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	165		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as				
6.1	specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes DN65mm PN10	No	1		
0.1	PN16 HDPE Compression fitting to DIN 8074/BS 5114	No.	'		
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		

	e ID. 5.1: KYAKUHANDA IN BUHWEJU DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	west	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				•
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
0.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	2		
	Reinstatement Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	24		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
2.1	Not exceeding DN200mm	m	30	1	

Region: West

No. Description Unit Qty. Rate (UGx.) (UGx.) Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm m 20 12.3 Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 28 13 Concrete Stools and Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No. Rate Only Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr 16 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS	BILL N	Io. 2 : TRANSMISSION MAINS		•		
12.2 sizes Not exceeding DN200mm	Item No.		Unit	Qty.	Rate (UGx.)	
12.2 Not exceeding DN200mm		Pipe surrounds, of imported granular material, for the following pipe				
12.3 Not exceeding DN200mm m 28 Concrete Stools and Thrust Blocks Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts 14 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Description Bill No. 2 Collection Page 8 Page 9 Page 10	12.2		m	20		
Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2: TRANSMISSION MAINS Description Bill No. 2 Collection Page 8 Page 9 Page 10	12.3		m	28		
Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts Marker Posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 8 Page 9 Page 10	13	Concrete Stools and Thrust Blocks				
Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection BILL No. 2: TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 8 Page 9 Page 10	13.1	Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
BILL No. 2 : TRANSMISSION MAINS Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Page 8 Page 9 Page 10	14	Marker Posts	nr	16		
Description Unit Qty. Rate (UGx.) Amount (UGx.)		Total Carried to Collection				
No. Description Unit Qty. Rate (UGX.) (UGx.) Bill No. 2 Collection Page 8 Page 9 Page 10	BILL N	Io. 2 : TRANSMISSION MAINS				
Page 8 Page 9 Page 10	Item No.	Description	Unit	Qty.	Rate (UGx.)	
Page 9 Page 10		Bill No. 2 Collection				
Page 10		Page 8				
		Page 9				
Total Bill No. 2 Carried to Bill Summary		Page 10				
Total Bill No. 2 Carried to Bill Summary						
Total Bill No. 2 Carried to Bill Summary						
Total Bill No. 2 Carried to Bill Summary						
Total Bill No. 2 Carried to Bill Summary						
		Total Bill No. 2 Carried to Bill Summary	1	<u> </u>		

	le ID. 5.1: KYAKUHANDA IN BUHWEJU DISTRICT No. 4.3 : STORAGE RESERVOIR WORKS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising	Item	1		
	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 1.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN50mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.4	DN50mm, PN10	No.	1		
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m^2	150		

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		,
7 7.1	Fences Columnicad with Council chain link force to DC 1799 with triple row		60		
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.0	Gates	N.I			
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete				
	Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
	following grades:				
8.1	Grade C15	m^3	2		
	Total Carried to Collection				
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary			1	

Region: West

BILL N	o.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	196		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
	OD75mm	No.	Rate Only		
	Unequal tees				
3.2	OD75 x 63mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	<u>Couplers</u>				
	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	8		
	Total Carried to Collection	<u> </u>	<u>I</u>	<u> </u>	

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				,
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.4	OD63mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN50mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	16		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads_				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	36		
	Total Carried to Collection				

Region: West

No. Descript	on	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill S	Summary			

Region: West

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Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

BILL N	e ID. 5.2: KANYAMUKALE IN BUNYANGABU DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	57		
2.2	Ditto but for the Intake Structure	m^3	34		
2.3	Excavation to form trapezoidal drain in marshy soils, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m^3	175		
	FIRE				
	Filling Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufaturer's specifications	m^2	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m ²	840		

	e ID. 5.2: KANYAMUKALE IN BUNYANGABU DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	west	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				<u> </u>
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
0.4	Blinding	2			
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1.1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe and Heel				
6.2	200mm thick toe.	m ³	0.3		
6.3	200mm thick base slab.	m ³	2.4		
6.4	350/ 200mm thick reaining wall/ weir stem.	m ³	0		
6.5	200mm thick sump walls.	m ³	13.5		
6.6	200mm thick top slab.	m ³	1.2		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	140		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m^2	11		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	1.2		
	Inserts				
8.2	DN 250 CL/CT florated modelled tring income income projection from him	No.	Rate Only		
	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.				
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged Cl gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-				
9.5	150 mm ND	No.	Rate Only		
	Total Carried to Collection		<u> </u>	1	

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
110.	Penstocks; hand operated including head stock and distance spindle, as				(UUX.)
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	Pump Protection System				
10.3	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
	Valve Surface Boxes				
10.4	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data	No.	1		
VII. 1	Module, rated flow Q = 20 m^3 /hr., rated head H = 55m total head; set to not more than 5m below ground including Dry- run protection, Motor and Pump End.	110.	'		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME4	PV Disconnect 1000-40-2	No.	1		<u> </u>
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME13	Earthing and Lightening Protection Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor	Item	1		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				(0 0)
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

	EID. 5.2: KANYAMUKALE IN BUNYANGABU DISTRICT O. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		
om	Description		Amount (UGx.)
	Bill No. 1 Collection		
	Page 2		
	Page 3		
	Page 4		
	Page 5		
	Page 6		
	Page 7		
	Total Bill No. 1 Carried to Bill Sumi	marv	

Region: West

			Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
2.1	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes: DN75mm, in trenches; depths not exceeding 1.5m	m	12		
	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN10	m	361		
	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings				
	Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
	Equal Adapters OD75 female adapter	No.	2		

	e ID. 5.2: KANYAMUKALE IN BUNYANGABU DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				,
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
10 4	following pipe sizes		20		
12.1	Not exceeding DN200mm Total Carried to Collection	m	20		-

Region: West

BILL N	No. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	52		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	20		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
5	Total Carried to Collection		l	ı	
Item	No. 2 : TRANSMISSION MAINS		1		Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 9				
	Page 10				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary				

	lo. 4.3 : STORAGE RESERVOIR WORKS		I	1	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		

Region: West

	Io. 3 : STORAGE RESERVOIR WORKS		Region.	11031	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
	following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	Io. 3 : STORAGE RESERVOIR WORKS	1	1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

Region: West

BILL N	Io.4 : DISTRIBUTION NETWORK		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				•
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	457		
2.1	OD75mm PN10	m	620		
	PIPEWORK - FITTINGS AND VALVES		020		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
	Unequal tees				
3.3	OD75 x 63mm	No.	10		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	9		
	Total Carried to Collection				

	e ID. 5.2: KANYAMUKALE IN BUNYANGABU DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	AAGOL	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	Rate Only		
6.2	OD63mm	No.	Rate Only		
7	Washouts				
'	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.4	Drawing No. OIS/NUC/SD/004.	NI-	4		
7.1	DN65mm	No.	Rate Only		
7.2	DN50mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	9		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	28		
	Total Carried to Collection		1		
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary			1	

Region: West

Scheme ID. 5.3: KASHOGI IN BUSHENYI DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	3.5		
2.4	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -	3			
3.1	Imported rock/ hardcore, hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
	Landscaping				
4	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m ²	840		
	Total Carried to Collection				

Region: West

IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: - Grade C15/10 Billinding 5.1 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. m³ 2.5 3 200mm thick base and heel slabs. m³ 5 4 500/ 200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 Formwork Formwork-Fair Finish Formwork-Fair Finish Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Flane fair finish Plane Vertical Plane fair finish Plane Vertical Flane fair finish port of filleting of all exposed concrete corners. Finishing of top surfaces Steel trowel finishing of top surfaces. m² 20	Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Ordinary Design Mix Concrete Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: - Grade C15/10 Blinding 5.1 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. 5.2 200mm thick base and heel slabs. m³ 5 5.3 200mm thick base and heel slabs. m³ 19.0 5.5 200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish voicial and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		IN-SITU CONCRETE				
Designed mix . concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures::- Grade C15/10 Bilinding 5.1 5.1 5.0mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. 7.2 7.3 7.3 7.5 7.3 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5		Provision and Placing of Concrete				
cement to BS 12, aggregate to BS 882 for the following structures: - Grade C15/10 Blinding 5.11 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. 7.2 200mm thick base and heel slabs. 8.3 200mm thick base and heel slabs. 8.4 500/200mm thick retaining wall/ weir stem. 8.5 200mm thick sump walls. 8.6 200mm thick top slab. 8.7 Formwork Formwork-Fair Finish 8.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. 8.2 Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. 8.3 Finishing of top surfaces		Ordinary Design Mix Concrete				
Grade C15/10 Blinding 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces						
Blinding 5.1 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filletting of all exposed concrete corners. Fair Finish Plane Vertical 6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		cement to BS 12, aggregate to BS 882 for the following structures: -				
5.1 Somm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		Grade C15/10				
of the following thickness Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		Blinding				
Grade C25/10 Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. 5.2 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m^3	1		
Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe. m³ 2.5 200mm thick base and heel slabs. m³ 5 5.4 500/ 200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		of the following thickness				
5.2 200mm thick key and toe. 5.3 200mm thick base and heel slabs. 5.4 500/200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces						
5.3 200mm thick base and heel slabs. 5.4 500/ 200mm thick retaining wall/ weir stem. 5.5 200mm thick sump walls. 6.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		_				
5.4 500/ 200mm thick retaining wall/ weir stem. m³ 19.0 5.5 200mm thick sump walls. m³ 41 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	5.2	200mm thick key and toe.	m ³	2.5		
5.5 200mm thick sump walls. 5.6 200mm thick top slab. Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	5.3	200mm thick base and heel slabs.	m^3	5		
Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	5.4	500/ 200mm thick retaining wall/ weir stem.	m^3	19.0		
Formwork Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	5.5	200mm thick sump walls.	m^3	41		
Formwork-Fair Finish 6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	5.6	200mm thick top slab.	m^3	1.2		
6.1 Fair Finish Plane Horizontal Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		Formwork				
Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		Formwork-Fair Finish				
and / or filleting of all exposed concrete corners. Fair Finish Plane Vertical Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces	6.1					
6.2 Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces			m ²	4.5		
charmfering and / or filleting of all exposed concrete corners. Finishing of top surfaces		Fair Finish Plane Vertical				
Finishing of top surfaces	6.2	Plane fair finish vertical and / or slightly soping formwork to walls including	m^2	145		
		charmfering and / or filleting of all exposed concrete corners.				
6.3 Steel trowel finishing of top surfaces. m ² 20		Finishing of top surfaces				
	6.3	Steel trowel finishing of top surfaces.	m ²	20		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				,
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
7.1	Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK				
	Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
	Pump Protection System				
8.2	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	Rate Only		
	Access Manhole Cover				
8.3	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 75m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		

Region: West

BILL N	Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	125		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	Total Carried to Collection				

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				,
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

Scheme ID. 5.3: KASHOGI IN BUSHENYI DISTRICT	Region:	West	
BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Description			Amount (UGx.)
Bill No. 1 Collection			
Page 2			
Page 3			
Page 4			
Page 5			
Page 6			
T. (1200) (10 11 12 10 10 11 12 10 10 11 11 11 11 11 11 11 11 11 11 11			
Total Bill No. 1 Carried to Bill Summar	у		

Item No. Description Description Unit Qty. Rate (UGx.) Amorgue Amorg		e ID. 5.3: KASHOGI IN BUSHENYI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
General Site Clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORKS - PIPES Steel Pipes Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes; 2.5 DN75mm, not in trenches; 2.6 DN75mm, in trenches; depths not exceeding 1.5m m 12 HIPPE Pipes HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m 3.2 OD75mm HDPE PN10 m 560 4 UPVC Pipes uPVC Pipes uPVC Pipes uPVC Pressure pipes to UNBS US 264; 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 Depth not exceeding 1.5m m Rate Only PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm No. 4 6 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meters Bulk Flow Meterinclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes	Item		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
2 Steel Pipes Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes: DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m The Pipes HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m DN75mm HDPE PN10 The Pipes UPVC Pipes UPVC Pipes UPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 Depth not exceeding 1.5m PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm No. 4 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes	1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of	Item	1		
unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m ### I2 #### I2 #### I2 ##### I2 ##### I2 ##### I2 ##### I2 ###### I2 ##########	2					
HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m 3.2 OD75mm HDPE PN10 m 560 4 uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 4.1 Depth not exceeding 1.5m m Rate Only PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm No. 4 6 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes		unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches;		-		
uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches OD110 to PN 10 4.1 Depth not exceeding 1.5m PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm No. 4 Bulk Flow Meters Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes		HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m	m	560		
A.1 Depth not exceeding 1.5m m Rate Only PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm No. 4 Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes	4	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN65mm No. Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes	4.1	Depth not exceeding 1.5m	m	Rate Only		
Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes	-	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all	No.	4		
	6	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
Total Carried to Collection	6.1	DN65mm PN10	No.	1		

-	e ID. 5.3: KASHOGI IN BUSHENYI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				, ,
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
•	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	•				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
	10. 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				

Region: West

BILL N	Io. 2 : TRANSMISSION MAINS		T		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	30		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection				
	Bill No. 2 Collection				
	Page 8				
	Page 0				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	1	<u>I</u>	1	

	e ID. 5.3: KASHOGI IN BUSHENYI DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	West	
tem No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
	Ioliowing height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	450 000 minus minut annual a tara along DVO V Consul 5'lles				
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-		_		
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				

Region: West

BILL N	Io. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways	•			
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
0.4	following grades:	3	2		
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	Bill No. 3 Collection				
	Page 11				
	Tage 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary		1		

Region: West

	Io.4 : DISTRIBUTION NETWORK	ı	ı	 	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	364		
2.2	OD75mm PN10	m	420		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
3.3	OD63mm	No.	2		
	Unequal tees				
3.4	OD75 x 63mm	No.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5 5.1	End caps OD63mm	No	6		
J. I		No.	6		
	Total Carried to Collection				

	e ID. 5.3: KASHOGI IN BUSHENYI DISTRICT No.4 : DISTRIBUTION NETWORK		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				, ,
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
•	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	2		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	6		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	21		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary	1	1		

Region: West

Scheme ID. 5.4: RWANSHETYA IN BUSHENYI DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 5.4: RWANSHETYA IN BUSHENYI DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m^3	45		
2.3	Ditto but for the River Weir Structure	m^3	3.5		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore, hand packed or compacted by the arm of an excavator.	m³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m²	840		
	Total Carried to Collection				

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
E 2	Reinforced Concrete Base Slabs, Toe, Key and Heel	3	2.5		
5.2	200mm thick key and toe.	m ³	2.5		
5.3	200mm thick base and heel slabs.	m^3	5		
5.4	500/ 200mm thick retaining wall/ weir stem.	m^3	19.0		
5.5	200mm thick sump walls.	m^3	41		
5.6	200mm thick top slab.	m^3	1.2		
	Formwork				
	Formwork-Fair Finish				
6.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.5		
	Fair Finish Plane Vertical				
6.2	Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
	Finishing of top surfaces				
6.3	Steel trowel finishing of top surfaces.	m^2	20		

	e ID. 5.4: RWANSHETYA IN BUSHENYI DISTRICT		Region:	vvest	
item No.	lo. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				(0 0111)
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
7.1	Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK				
	Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
	Pump Protection System				
8.2	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	1		
	Access Manhole Cover				
8.3	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 75m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
	Total Carried to Collection			1	

Region: West

ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. ME7 PV Combiner ME7a Pressure Switch and Gauge - P5/8 ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Item No. No. No. m m No.	1 1 1 1 5 100 60 2	Rate (UGx.)	Amount (UGx.)
etc. ME7 PV Combiner Pressure Switch and Gauge - P5/8 ME8 Sinewave filter - SWAP0017D. NME9 10mm² Borehole drop cable, ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	No. No. m m m No.	1 1 1 5 100		,
ME7a Pressure Switch and Gauge - P5/8 ME8 Sinewave filter - SWAP0017D. 10mm² Borehole drop cable, ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11a Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	No. No. m m No.	1 1 5 100		
ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	No. m m m No.	1 5 100 60		
ME9 10mm² Borehole drop cable, ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	m m m No.	5 100 60		
ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10 6mm² UV Single Cable. ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	m m No.	100		
ME11 Wire kit array from solar array to controller with MC4 connectors ME11 Adapter box Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	m No.	60		
WE11 Wire kit array from solar array to controller with MC4 connectors No. ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	No.			
Adapter box Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth		2		
Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth				
No. OIS/PH/001 - Sheets 3 & 4 of 4. Earthing and Lightening Protection ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	No.	1		
ME13 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth	Item	1		
manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm ME14 Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth				
manhole with pure copper electrodes and all accessories to attain an earth	Sum	1		
· · · · · · · · · · · · · · · · · · ·	Sum	1		
ME15 60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
Alarm System				
ME16 GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17 GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
Х7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		

. 5.4: RWANSHETYA IN BUSHENYI DISTRICT : ABSTRACTION AND ELECTROMECHANICAL WORKS	Region:	11001	
 scription			Amou (UGx
Bill No. 1 Collection			
Page 2			
Page 3			
Page 4			
Page 5			
Page 6			

Region: West

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.5	DN75mm, not in trenches;	m	Rate Only		
2.6	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
•	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
	architect to depths not exceeding 1.0m				
3.2	OD75mm HDPE PN10	m	540		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,		1		
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes		1		
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
	Total Carried to Collection	•			

	e ID. 5.4: RWANSHETYA IN BUSHENYI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
	asymptote de openios dia to the following departs				
10.2	Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		

Region: West

BILL N	No. 2 : TRANSMISSION MAINS		ixegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe sizes				,
12.2	Not exceeding DN200mm	m	30		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	2		
13	Concrete Stools and Thrust Blocks				
13.1	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	2		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection	1			
BILL N	No. 2 : TRANSMISSION MAINS			·!	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary				

	e ID. 5.4: RWANSHETYA IN BUSHENYI DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	West	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising	Item	1.0		
'	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
J	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		

Region: West

	Io. 3 : STORAGE RESERVOIR WORKS		Region:	,	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection			1	
	Dill No. 2 Callagation				
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	DEMOLITION AND SITE CLEARANCE General Site Clearance				(,
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2 2.1 2.2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m OD63mm PN10 OD75mm PN10	m m	196 240		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3 3.1 3.2	Equal tees OD75mm OD63mm	No. No.	2 2		
3.3	Unequal tees OD75 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4 4.1 4.2	Couplers OD75mm OD63mm	No. No.	Rate Only Rate Only		
5 5.1	End caps OD63mm	No.	4		
	Total Carried to Collection				

Region: West

Description Uni			Amount
Flanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified. 6.1 OD75mm	it Qty.	Rate (UGx.)	(UGx.)
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Surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004. 7.1 DN65mm No. 8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection Bill No. 4 Collection			
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cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DN50mm No. Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection Bill No. 4 Collection			
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9 Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection Bill No. 4 Collection			
Total Carried to Collection Bill No. 4 Collection			
Bill No. 4 Collection	14		
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Page 14			
Total Bill No. 4 Carried to Bill Summary			

Scheme ID. 5.5: KIRUHUSI IN IBANDA DISTRICT BILL SUMMARY

Region:	West
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Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	48		
2.5	Soft / decomposed rock soils	m ³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		

Region: West

	No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	11031	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE Provision and Placing of Concrete Ordinary Design Mix Concrete Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for the following structures: -				
5	Insitu Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts Cast or Spum Iron Pipe Fittings. Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Total Carried to Collection				

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	WEST	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				· · · · ·
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	i unp cump.				
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
40	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6				
	for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	-				
	Pump Well/ Sump				
15	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); Internal diameter; 1200x200mm	Item	Rate		
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 -	nr	Rate		

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT		Region:	West	
	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ı	<u> </u>	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME1	ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 11.0kW submersible pump set, rated flow Q = 15 m³/hr., rated head H = 85m total head; set not to more than 5m below ground including Dry- run protection, 15kW Inverter, Controller with Data Module, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
	Total Carried to Collection				

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
	Total Carried to Collection				

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
Item No.	Description				Amount (UGx.)
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		,
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
Х6а	Fences Galvarnised wire Gauge 10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge 10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XXX	Stone Pitching. 250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m²	125		
	Total Carried to Collection	1	Ī	T	
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7 Total Bill No. 1 Carried to Bill Summary				<u> </u>

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	600		
4	uPVC Pipes uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
4.1	OD110 to PN 10 Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN65mm	No.	4		
	Total Carried to Collection	<u>I</u>	<u> </u>		

-	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes				
	of the following sizes, all to PN10, include chamber as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic compression				
	pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone				
	masonry outfall structure and all other fittings necessary to make the				
	complete installation on pipes of the following sizes; all to PN10 including				
	valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of				
	the following depths				
10.1	Depth not exceeding 1.5m	No.	1		
	Total Carried to Collection				

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	36		
	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	20		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	60		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	40		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1- 0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Total Carried to Collection				

Region: West

Item No. Description Unit Qty. Rate (UGx.) Amoun (UGx.)	BILL N	Io. 2 : TRANSMISSION MAINS		rtegion.	11001	
Other Pipework Ancillaries Marker Posts	Item		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Marker posts for pipes, gate valves, air valves, washouts No. 20		Other Pipework Ancillaries				,
STRUCTURAL METALWORK Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings 15.1 Span 3 - 5m at height not exceeding 2m. No. Rate Only Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 8 Page 9		Marker Posts				
Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings 15.1 Span 3 - 5m at height not exceeding 2m. No. Rate Only Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 8 Page 9	14	Marker posts for pipes, gate valves, air valves, washouts	No.	20		
Shown on drawings Shown on drawings Shown on drawings Span 3 - 5m at height not exceeding 2m. No. Rate Only		STRUCTURAL METALWORK				
Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Bill No. 2 Collection Page 8 Page 9						
Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 8 Page 9	15.1	Span 3 - 5m at height not exceeding 2m.	No.	Rate Only		
BILL No. 2 : TRANSMISSION MAINS Item No. Description Unit Qty. Rate (UGx.) Bill No. 2 Collection Page 8 Page 9	15.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
Description Unit Qty. Rate (UGx.) Amount (UGx.)		Total Carried to Collection	<u> </u>			
No. Description Bill No. 2 Collection Page 8 Page 9	BILL N	Io. 2 : TRANSMISSION MAINS				
Page 8 Page 9		Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Page 9		Bill No. 2 Collection				
		Page 8				
Page 10		Page 9				
		Page 10				
Page 11		Page 11				
Total Bill No. 2 Carried to Bill Summary		Total Bill No. 2 Carried to Bill Summary				

LL No. 3 : STORAGE RESERVOIR WORKS Description O.				
	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
DEMOLITION AND SITE CLEARANCE				
General Site Clearance				
General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2 Reservoir				
Erect a welded steel tower for reservoir support complete, include				
foundations, columns, beams, acess ladders, plates, braces, walkway/				
guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
finishes; complete as specified and detailed in the drawings , of the				
following height and reservior capacities.				
.1 Height; 4.5m for (4No. x 10m³ Tanks)	No.	1		
3 Plastic Tanks				
Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex				
Ltd. / Crest Tanks or any other approved complete with a lockable access				
man ways, inlet/ riser, ball float valve, overflow with insect screen, float type				
water level indicator and outlet/ down pipe with a strainer, washout and				
overflow connection, including interconnecting pipe work and fittings, as				
detailed in the drawings, supply specifications and of the following capacity.				
.1 10m ³	No.	4		
10111		·		
150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non				
corrosive, complete with all fittings, installation on the following GI nine				
sizes, pressure ratings and supply of a pair of replacement screen element				
and seal ring:-				
.1 DN75mm, PN10	No.	1		
150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non_				
corrective complete with all fittings, installation on the following GL pine				
sizes, pressure ratings and supply of a pair of replacement disk element				
and seal ring :-				
[OPTIONAL]				
.1 DN75mm, PN10	No.	1		
	110.	'		

BILL No. 3 : STORAGE RESERVOIR WORKS					
Item No. Description		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 Landscaping and Walkways 6.1 Turfing for lawns inside fenced off compound excavated topsoil and preparation of surface		m ²	150		
6.2 500 x 500 x 50mm precast concrete paving s method" between the gate, pump house and onto and including 200mm thick murram fill.		No.	Rate Only		
7 7.1 Galvarnised wire Gauge10 chain link fence to barbed wire on top; height 2-2.5m.	BS 1722 with triple raw of	m	60		
7.2 Gates Metal field gate to BS 3470; width 1.5m single fence.	e leaf and height to match the	No.	1		
Provision and Placing of Concrete Ordinary Designed Mix Concrete					
Designed mix concrete, to BS 5328, with ording aggregate to BS882, for 10mm aggregate s	-				
8.1 Grade C15		m^3	2		
8.2 Grade C20		m ³	Rate Only		
8.3 Grade C25		m ³	Rate Only		
8.4 Grade C30		m ³	Rate Only		
Total Car	ried to Collection			<u> </u>	
BILL No. 3 : STORAGE RESERVOIR WORKS				•	
No. Description		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Bill No. 3 Collect	ion				
Page 12					
Page 13					
	Carried to Bill Summary				

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	Rate Only		
2.2	OD75mm PN10	m	1,000		
2.3	OD90mm PN6	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	6		
	Unequal tees				
3.2	OD90 x 63mm	No.	30		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	Tidatio Tipe Tittings				
4	Couplers		Data O :		
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	30		
	Total Carried to Collection				

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.1	OD75mm	No.	1		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1 7.2	DN75mm DN50mm	No. No.	3 1		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	30		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	STRUCTURAL METALWORK				
	Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings				
	Total Carried to Collection				

Scheme ID. 5.5: KIRUHUSI IN IBANDA DISTRICT

	e ID. 5.5: KIRUHUSI IN IBANDA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.1	Span 3 - 5m at height not exceeding 2m.	No.	Rate Only		
10.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
	Reinstatement Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	32		
DII I N	Total Carried to Collection o. 4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Page 16				

Total Bill No. 4 Carried to Bill Summary

Region: West

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Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

<u>sil</u> l r	No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	520		
2.2	Ditto but in marshy soils	m^3	296		
2.3	Ditto but in soft / decomposed rock soils	m^3	136		
2.4	Excavation to form trapezoidal drain in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	350		
2.5	Ditto but in marshy soils	m^3	260		
2.6	Ditto but in soft / decomposed rock soils	m ³	170		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
3.1	as shown in the drawings with the following materials: -	m^3	Rate Only		
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ⁻	ivate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	Rate Only		
4	Single layer of geotextile laid to manufaturer's specifications	m^2	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m ² at Intake Site and 800m ² at Pump Station.	m ²	1,050		

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				,
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

Region: West

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Total Carried to Collection			<u> </u>	

	IE ID. 5.6: NYACWAMBA IN KAMWENGE DISTRICT No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				•
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	<u>Gates</u>				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection	l .	<u> </u>		
BILL N	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem	Description				Amount
No.	·				(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

	e ID. 5.6: NYACWAMBA IN KAMWENGE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	AAGOI	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amoun (UGx.)
	DEMOLITION AND SITE CLEARANCE				•
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Calvaniand iron visco (Class B) with threaded in into include				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
۷.۷	Division, in denoties, deputs not exceeding 1.5m	111	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	248		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10		Data Oalu		
4.1	Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.1	DN75mm	No.	4		
	Total Carried to Collection				

em	Description	Unit	Qty.	Rate (UGx.)	Amount
lo. 6	Bulk Flow Meters			, /	(UGx.)
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN75mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
٠.	chamber as specified.		_		
8.1	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
20	PN10 including valve surface box to detail.	NI-	4		
9.2	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
0.1	Depth not exceeding 1.5m	No.	1		

tom	o. 2 : TRANSMISSION MAINS		Region:	West	
No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				(CCIII)
<u> </u>	Depth not exceeding 1.5m Reinstatement Roads	No.	Rate Only		
<u> </u>	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	24		
	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
	Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes	m	30		
	Not exceeding DN200mm Concrete Stools and Thrust Blocks	m	15		
	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		

eme ID. 5.6: NYACWAMBA IN KAMWENGE DISTRICT L No. 2 : TRANSMISSION MAINS		Region:	West	
Description	Unit	Qty.	Rate (UGx.)	Amoun (UGx.)
Bill No. 2 Collection				
Page 6				
Page 7				
Page 8				
Total Bill No. 2 Carried to Bill S				

ILL N	lo. 4.3 : STORAGE RESERVOIR WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
_	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
	Islanding the light data roos that capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter.				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement				
	screen element and seal ring:				
4.1	DN65mm, PN10	No.	1		
7.1					
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	Total Carried to Collection				

Region: West

BILL N	o. 3 : STORAGE RESERVOIR WORKS		3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	o. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 5.6: NYACWAMBA IN KAMWENGE DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
_	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	318		
2.2	OD75mm PN10	m	100		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
					
3	Equal tees				
3.1	OD63mm	No.	3		
	Unequal tees				
3.2	OD75 x 63mm	No.	4		
	DU40 UDDE 0				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	Tradic Tipe Hungs				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	4		
	Total Carried to Collection		•		

-	e ID. 5.6: NYACWAMBA IN KAMWENGE DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	West	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD63mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN50mm	No.	3		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
8.1	DN50mm	No.	4		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	10		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
10	for the following pipe sizes		0.4		
10	Not exceeding DN300mm	m	24		
	Total Carried to Collection	·	l l		
	Bill No. 4 Collection				
	Page 12				
	Page 13				
	Total Bill No. 4 Carried to Bill Summary	<u> </u>			

Region: West

Scheme ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		. togioni.	West		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
	General Site Clearance				, ,	
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1			
	Earthworks					
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35			
2.2	Ditto but for the Intake Structure	m ³	45			
2.3	Ditto but for the River Weir Structure	m ³	3.5			
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -					
3.1	Imported rock/ hardcore, hand packed or compacted by the arm of an excavator.	m ³	55			
3.2	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	44			
3.3	Imported murram.	m^3	18			
	Landscaping					
4	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m^2 at Intake Site and 800m^2 at Pump Station.	m ²	840			
	Total Carried to Collection		•			

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	11031	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				• •
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
E 2	Reinforced Concrete Base Slabs, Toe, Key and Heel	3	2.5		
5.2	200mm thick key and toe.	m ³	2.5		
5.3	200mm thick base and heel slabs.	m ³	5		
5.4	500/ 200mm thick retaining wall/ weir stem.	m ³	19.0		
5.5	200mm thick sump walls.	m ³	41		
5.6	200mm thick top slab.	m ³	1.2		
	Formwork				
	Formwork-Fair Finish				
6.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m ²	4.5		
	Fair Finish Plane Vertical				
6.2	Plane fair finish vertical and / or slightly soping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m ²	145		
	Finishing of top surfaces				
6.3	Steel trowel finishing of top surfaces.	m ²	20		
	Total Carried to Collection				

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinforcement				
	Deformed High Yield Steel				
7.1	High yield square twisted bars to BS 4449 and of the following sizes Nominal size, 12mm	t	2.0		
	MISCELLANEOUS METAL WORK Ladders				
8.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	5		
8.2	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to	No.	Rate Only		
	detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.				
	Access Manhole Cover				
8.3	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = $20 \text{ m}^3/\text{hr}$, rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level	Item	1		
	Total Carried to Collection				

Region: West

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PV Combiner	No.	1		, ,
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				(====)
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the				
	following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Total Carried to Collection				

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amount
No.	Description				(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

-	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		(Cong
2	PIPEWORKS - PIPES Steel Pipes				
2.1	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes: DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3 3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN10		380		
3.1	PIPEWORK - FITTINGS AND VALVES	m	300		
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all DN75mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN75mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD90 female adapter	No.	2		
8	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
8.1	DN75mm	No.			

-	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT		Region:	West	
Item No.	lo. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				,
9.1	DN75mm PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES	No.	2		
10.1	Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths	No.	1		
10.2	Depth not exceeding 1.5m	No.	2		
11	Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm Surrounds	m	36		
12.1	Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm	m	36		
12.2	Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm	m	72		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	20		
	Total Carried to Collection				

Region: West

SILL No. 2 : TRANSMISSION MAINS		rtegion.	11001	
tem No.	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
13 Concrete Stools and Thrust Blocks				, ,
Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	20		
Total Carried to Collection	•			
BILL No. 2 : TRANSMISSION MAINS		1	1	
tem No. Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Bill No. 2 Collection				
Page 8				
Page 9				
Page 10				

em	o. 4.3 : STORAGE RESERVOIR WORKS			_ , ,	Amount
lo.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
•	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
D. I	Ium	NO.	7		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
1 1	DN65mm, PN10	No.	1		
1.1					
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
- ,	DN65mm, PN10	No.	1		
5.1		INO.	ı		
				1	

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m^3	2		
	Total Carried to Collection				
	Io. 3 : STORAGE RESERVOIR WORKS		_		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	392		
2.2	OD75mm PN6	m	264		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	4		
2.0	Unequal tees	NI.			
3.2	OD75 x 63mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	10		
	Total Carried to Collection	<u> </u>	<u> </u>	<u> </u>	

	e ID. 5.7: RWENKUGIRO IN MITOOMA DISTRICT		Region:	West	
Item No.	lo.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				\-\(\frac{1}{2} \)
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD75mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
	No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	3		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	10		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	24		
	Total Carried to Collection		ı		
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Region: West

Scheme ID. 5.8: FOR KATONYA IN RUBIRIZI DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	•	Onic	Qty.	rtate (OOX.)	(UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m^3	52		
2.2	Soft / decomposed rock soils	m^3	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m^3	48		
2.5	Soft / decomposed rock soils	m ³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m^3	16		
2.7	Soft / decomposed rock soils	m^3	8		
	Filling Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m^3	10		

	e ID. 5.8: FOR KATONYA IN RUBIRIZI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				, ,
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	1800mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	Item	1		
	Pre-cast Concrete Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts on concrete base slab (MS); complete with water tight jointing and finishing works to approval.				
7	Internal diameter ; 1200mm	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Total Carried to Collection				

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Adaptors				, ,
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
	Pump Well/ Sump				
	Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS); complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site.	Item	Rate Only		
15	Internal diameter ; 1200x200mm				
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only	,	

Region: West

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 100m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Total Carried to Collection				

Region: West

BILL N	IO.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Kegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Earthing at solar array and borehole installation by 16mm2 PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				

	e ID. 5.8: FOR KATONYA IN RUBIRIZI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	West	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
RII I N	Total Carried to Collection Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		<u>I</u>		
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				· · · · ·
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

	Io. 2 : TRANSMISSION MAINS	Т	1	 	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	450		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10				
4.1	Depth not exceeding 1.5m	m	Rate Only		
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1	DN75mm	No.	4		
	PIPEWORK - FITTINGS AND VALVES				
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN75mm PN10	No.	1		
	Total Carried to Collection				

	e ID. 5.8: FOR KATONYA IN RUBIRIZI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	West	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				, ,
7 7.1	Equal Adapters OD90 female adapter	No.	2		
8	Valves and Penstocks Air Valves				
8.1	Flanged CI double orifice air relief valve, DN50mm, as specified DN75mm	No.	1		
9	Washouts Washout as specified in the drawings, complete with plastic				
9.1	compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail. DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
10.1	Masonry air valve chamber, complete as specified in the drawings, and of the following depths Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include				
10.2	down pipe, complete as specified and to the following depths Depth not exceeding 1.5m	No.	Rate Only		
	Reinstatement Roads				
44	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes		Detr Oct		
11	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection				

Region: West

RILLN	Io. 2 : TRANSMISSION MAINS		ixegion.	11631	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	45		
	Dine surrounde of mose consults for the fallowing sine sine				
40.0	Pipe surrounds, of mass concrete, for the following pipe sizes		0.4		
12.3	Not exceeding DN200mm	m	24		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m³, for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	·				
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	21		
	Total Carried to Collection				
BILL N	Io. 2 : TRANSMISSION MAINS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	·				(UGx.)
	Bill No. 2 Collection				
	Page 8				
	T age o				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary				

Region: West

BILL N	Io. 4.3 : STORAGE RESERVOIR WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance	14	4		
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 1.0m for (4No. x 10m³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
4.1	DN65mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.1	DN65mm, PN10	No.	1		
	Total Carried to Collection			1	

Region: West

BILL N	Io. 3 : STORAGE RESERVOIR WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
8.1	following grades: Grade C15	m^3	2		
	Total Carried to Collection		<u> </u>		
BILL N	lo. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 5.8: FOR KATONYA IN RUBIRIZI DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	vvest	
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				•
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	468		
	OD75mm PN10	m	660		
	OD90mm PN10	m	120		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
	OD75mm	No.	1		
	OD63mm	No.	6		
	Unequal tees				
3.3	OD90 x 63mm	No.	1		
3.4	OD75 x 63mm	No.	1		
3.5	OD75 x 50mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
	End caps				
5.1	OD90mm	No.	Rate Only		
5.2	OD75mm	No.	Rate Only		
	Total Carried to Collection				

-	e ID. 5.8: FOR KATONYA IN RUBIRIZI DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	AAGOI	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD75mm	No.	4		
6.2	OD63mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
	Drawing No. OIS/NUC/SD/004.				
7.1	DN65mm	No.	4		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	72		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary		1		