



MINISTRY OF WATER AND ENVIRONMENT

CIVIL WORKS FOR OFF-FARM IRRIGATION INFRASTRUCTURE AND FACILITIES

Volume 3: Bills of Quantities

Pro	c. Ref. No.: MWE/WRKS/24-25//1
LOT 1	NORTHERN AND CENTRAL UPPER REGIONS

Issued on:January 2025

GRAND SUMMARY

Bill/ Scheme ID.	Description			Amount (UGx.)
	GENERAL			
PG	Preliminaries and Go	anaral Itams		
GI.1	Method Related Cha			
DW	Dayworks	11965		
DVV	Dayworks			
	<u> </u>	SUB TOTAL 1		
	WORK ITEMS	0021017(21		
	Scheme Name	District	Region	
1.1	Teatoke	Amolatar	 North	
1.2	Adak B	Apac	North	
1.3	Alake	Dokolo	North	
1.4	Lwala	Kwania	North	
1.5	Abeibuti	Oyam	North	
1.6	Bung Iponga	Oyam	North	
1.7	Odyebo	Oyam	North	
2.1	Koro Angaba	Omoro	North	
2.2	Ocaga	Omoro	North	
2.3	Opukomony	Omoro	North	
2.4	Kikaito	Kiryandongo	Central	
2.5	Nyakagweng	Kiryandongo	Central	
2.6	Kikungura	Masindi	Central	
2.7	Ntooma	Masindi	Central	
2.8	Kinoni	Nakasongola	Central	
3.1	Meeru	Buvuma	Central	
3.2	Bwamulamira	Kayunga	Central	
3.3	Buwungiro	Kayunga	Central	
3.4	Mpangati	Luwero	Central	
3.5	Mawundwe	Mityana	Central	
3.6	Nvunanwa	Nakaseke	Central	
3.7	Masulita	Wakiso	 Central	
4.1	Bedimwolo	Alebtong	North	
4.2	Odokomit	Agago	North	
4.3	Oget	Kitgum	North	
4.4	Lagot Opuk	Lamwo	North	
4.5	Tekullu	Lira	 North	
4.6	Omeny Ki Mac	Pader	North	
4.7	Opore	Otuke	 North	

GRAND SUMMARY

Bill/ Scheme	Description			Amount (UGx.)
ID.		T		
5.1	Elegu	Adjumani	North	
5.2	Panyua	Madi - Okollo	North	
5.3	Abaa	Maracha	North	
5.4	Paubo	Moyo	North	
5.5	Ceke	Nwoya	North	
5.6	Ongai	Nwoya	North	
5.7	Onyom Til	Nwoya	North	
		SUB TOTAL 2		
		SUB TOTAL 1 + 2		
		Add 10% Contigencies		
		SUB TOTAL 3		
		Add 18% VAT		
		GRAND TOTAL Carried to Bid Form	-	

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 2.1	Testing of Materials and Works 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 3.1	Temporary works Provide, erect and maintain during the construction period 2No. sign boards per scheme at locations shown by the Engineer and in accordance	Nr	72		
3.2	with the Drawings and Specifications. De-watering; Allow for work in water affected areas, including all temporary works, pumping, protection, access, etc to ensure the works are completed	Sum	1		
0.2	as specified; include removal of facilities. Control and diversion of water from site and work areas to ensure the	Odili	'		
3.3	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 4.1	Provisional Sums 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	
4.5	Contractor's handling charge on all provisional sums under 4.1a, 4.1b, 4.2, 4.3, 4.4a, & 4.4b above	%	10		
Total Car	ried to Collection				
Total Bill	No. PG Carried to Summary				

BILL No. GI.2: 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	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
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		Other applicable Method-related Charges, if any, may be inserted by				, ,
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		Mobilisation on site				
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	1.3	Supply and/or erect Contractor's site offices.	sum	1		
		Other applicable Time-Related Charges, if any, may be inserted by the				

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	liters	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		
DW20	High yield steel reinforcement:- 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>	
	CONTRACTOR'S EQUIPMENT				

BILL No. DW: DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
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 m³ bucket.	hr	10		
DW32	0.5m ³ bucket.	hr	10		
DW33	1.0m ³ bucket.	hr	10		
	Super long reach boom Excavator:				
DW34	0.25 m³ bucket.	hr	10		
DW35	0.5m ³ bucket.	hr	10		
DW36	1.0m ³ 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 (iii) 250 kw.	nr hr	10 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

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Concrete mixers with weigh batchers and loading hoppers:				(00/1)
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		
DW47	Dewatering Pumps with motor and 5m suction, 3m delivery hose Nominal size 50mm.	hr	20		
DW48	Nominal size 100mm.	hr	20		
	Mobile Cranes: including slings chains, dogs and nips				
DW49	5t capacity	hr	5		
	Total Carried to Collection				
	COLLECTION				
	Page 1				
	Page 2				
	Page 3				
	Total Carried to Grand Summary				

North

Region:

Scheme ID. 1.1: TEATOKE IN AMOLATAR DISTRICT

BILL SUMMARY

Bill S	ILL SUMMARY					
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					
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	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT		Region:	North	
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		
2.6 2.7	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. Marshy soils Soft / decomposed rock soils	m³ m³	16 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		

Schem	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT		Region:	North	
	Total Carried to Collection				
BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
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	2200mm 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	2200mm 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				
7	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. 1200mm diameter; height n.e. 8m		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. 1.1: TEATOKE IN AMOLATAR DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description 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		
11	Bellmouths 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				
13	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		
	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		
	Total Carried to Collection	-		-	

North

Region:

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
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 = 20 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	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	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				
ME11a	Adapter box	No.	1				
	Total Carried to Collection						

North

Region:

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.		
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		
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	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		
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		
	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				

Scheme ID. 1.1: TEATOKE IN AMOLATAR DISTRICT BILL No.1: ABSTRACTION AND ELECTROMECHANICAL WORKS			Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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	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	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		
Х9	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 No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

Scheme ID. 1.1: TEATOKE IN AMOLATAR DISTRICT BILL No. 2: TRANSMISSION MAINS			Region:	North	
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				
	Galvanised irion pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes:				
2.1	DN75mm, not in trenches;	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	430		
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				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, and of the following sizes DN75mm	No.	4		
	Total Carried to Collection				

	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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				
6.3	DN65mm 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				
	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.				
8.4	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.				
9.2	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				
	and or the following doptile				
10a	Depth not exceeding 1.5m	No.	1		
II I N	Total Carried to Collection lo. 2 : TRANSMISSION MAINS				
tem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	·		αιy.	(00%.)	(UGx.)
	Valve Surface Boxes				

Schem	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT	_	Region:	North			
	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						
10b	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				
12.1	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes Not exceeding DN200mm	m	14				
12.2	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						
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						
Total Carried to Collection							

L No. 2 : T	: TEATOKE IN AMOLATAR DISTRICT RANSMISSION MAINS	,			
m Descri	otion	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill				

	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT Io. 4.3 : STORAGE RESERVOIR WORKS		Region:	North	
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 Tower				
	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 30m ³ Tank.	No.	1		
3	<u>Tanks</u>				
	Supply and Install a fabricated 6.0mm thick mild steel plate				
	horizontal cylindrical tank with 1No. 0.6m wide access man way.				
	water level indicator (scale in cubic metres), with inlet, outlet,				
	washout and overflow connection complete with access points,				
	ventilators (2 nr), and internal access ladders, inclusive of anti-rust				
	painting internally, finishes and all necessary accessories to				
	installation complete as specified and detailed in the drawings; to the				
	Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
	galvaniseu steet.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
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				
4	following GI pipe sizes, pressure ratings and supply of a pair of				
	replacement screen element and seal ring :-				
4.1	DN75mm, PN10	No.	1		

	D. 1.1: TEATOKE IN AMOLATAR DISTRICT O. 3: STORAGE RESERVOIR WORKS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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:-				
5.1	[OPTIONAL] DN75mm, 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		
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 No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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				
2.2	OD75mm PN16	m	380		
2.3	OD90mm PN16	m	285		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.2	OD90mm	No.	1		
3.3	OD75mm	No.	1		
	Unequal tees				
3.6	OD90 x 75mm	No.	2		
3.7	OD90 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		

Scheme ID. 1.1: TEATOKE IN AMOLATAR DISTRICT Region: BILL No.4: DISTRIBUTION NETWORK					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5	End caps				•
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	3		
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.				
6.2	OD90mm	No.	Rate Only		
6.3	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.				
7.2	DN75mm	No.	Rate Only		
7.3	DN65mm	No.	Rate Only		
	Total Carried to Collection			<u> </u>	

_	e ID. 1.1: TEATOKE IN AMOLATAR DISTRICT o.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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: -				
8.3	DN65mm	No.	Rate Only		
8.4	DN50mm	No.	12		
9	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts	nr	26		
BULLA	Total Carried to Collection				
Item	o. 4 : DISTRIBUTION NETWORK	1			Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Page 16				
	Total Bill No. 4 Carried to Bill Summary				0

Region: North

Scheme ID. 1.2: ADAK B IN APAC 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	
<u> </u>	rotal darried to Grand duminary	

cheme ID. 1.2: ADAK B IN APAC DISTRICT IILL No. 1: ABSTRACTION AND ELECTROMECHANICAL WORKS			Region:	North	
tem 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				
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				
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	Rate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	Rate Only		
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				

LL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
em Io.	Description	Unit	Qty.	Rate (UGx.)	Amoun (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: -				
	certain to be 12, aggregate to be our 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	1.1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe and Heel				
5.2	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: North

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 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		
	Total Carried to Collection			1	

	e ID. 1.2: ADAK B IN APAC DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9.6	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: - 300mm wide x 1000mm high, Stainless steel.	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.	0		
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		
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 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		
	Total Carried to Collection				

	e ID. 1.2: ADAK B IN APAC DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
ltem	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 - 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 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		
	Total Carried to Collection				

	e ID. 1.2: ADAK B IN APAC DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description 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	2		
	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	30		
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		
	Total Carried to Collection				

	e ID. 1.2: ADAK B IN APAC DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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	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			T I	
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

	e ID. 1.2: ADAK B IN APAC DISTRICT		Region:	North	
_	o. 2 : TRANSMISSION MAINS	1	I	1	
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	Galvanised irion 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				
3.1	OD90mm HDPE PN16	m	370		
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 16				
4.1	Depth not exceeding 1.5m PIPEWORK - FITTINGS AND VALVES	m	Rate Only		
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 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		

	e ID. 1.2: ADAK B IN APAC DISTRICT o. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
110.	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 ,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		
8.2	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 PN16	No.	1		
9.2	DN65mm	No.	Rate Only		
	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		
	Total Carried to Collection		<u> </u>		

	e ID. 1.2: ADAK B IN APAC DISTRICT o. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 Reinstatement	No.	Rate Only		
11	Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	Rate Only		
12.1	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	m	Rate Only		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm Concrete Stools and Thrust Blocks	m	Rate Only		
	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	15		
	Total Carried to Collection				

Region: North

BILL N	Io. 2 : TRANSMISSION MAINS		rtegioii.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	,				
	Page 9				
	Page 10				
	Page 11				
	Takal Pill No. 0.0 and a de Pill O				
	Total Bill No. 2 Carried to Bill Su	mmary			

	e ID. 1.2: ADAK B IN APAC DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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 Tower				
	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 30m ³ Tank.	No.	1		
3	<u>Tanks</u>				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and overflow				
	connection complete with access points, ventilators (2 nr), and internal				
	access ladders, inclusive of anti-rust painting internally, finishes and all				
	necessary accessories to installation complete as specified and detailed				
	in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	December 20.03 manifest conseits accorded as a Constitution	No.	1		
-	Reservoir: 30m³ nominal capacity erected on a 6m high tower	-	-		
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:-	l	Data C. i		
4.1	DN100mm, PN10	No.	Rate Only		
4.2	DN75mm, PN10	No.	Data Only		
4.3	DN65mm, PN10 Total Carried to Collection	No.	Rate Only	<u> </u>	

Region: North

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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:-				
- 4	[OPTIONAL]		Data Only		
5.1	DN100mm, PN10	No.	Rate Only		
5.2 5.3	DN75mm, PN10 DN65mm, PN10	No. No.	1 Rate Only		
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	60		
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 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		
8.2	Grade C20	m ³	Rate Only		
	Total Carried to Collection				

Region: North

BILL No. 5.3 : STORAGE RESERVOIR WORKS					
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	<u> </u>			

Region: North

DEMOLITION AND SITE CLEARANCE General Site Clearance 1 General sit	Item	Description	Unit	Qty.	Rate (UGx.)	Amount
General 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. PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid intench to the following depths not exceeding 1.5m OD63mm PN6 OD90mm PN6 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings General Site Clearance Item 1 1 1 1 1 1 1 1 1 1 1 1 1	No.	•	- Jill	Gty.		(UGx.)
1 General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid intended to the following depths not exceeding 1.5m m 260 m 140 m 406 2.1 OD63mm PN6 m 140 m 406 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3 Equal tees 3.1 OD90mm No. 4 Unequal tees 3.2 OD90 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers 4.1 OD90mm No. Rate Only No. End Caps 5.1 OD63mm No. 5		·				
route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Plastic Pressure Pipes - Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid intended to the following depths not exceeding 1.5m 2.1 OD63mm PN6		General Site Clearance				
materials.	1		Item	1		
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						
HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m		PIPEWORK-PIPES				
trench to the following depths not exceeding 1.5m	2	Plastic Pressure Pipes- Distribution				
2.2 OD75mm PN6 m 140 QD90mm PN6 m 406 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. 4 3.1 Unequal tees OD90mm No. 1 3.2 OD90 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. Rate Only 4 Couplers OD90mm No. Rate Only 4.1 OD75mm No. Rate Only 5 End caps OD63mm No. 5 5.1 OD63mm No. 5						
2.3 OD90mm PN6 m 406 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3 Equal tees OD90mm No. 4 Unequal tees OD90 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers OD90mm No. Rate Only A.2 OD75mm No. 5	2.1	OD63mm PN6	m	260		
2.3 OD90mm PN6						
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings						
Plastic Pipe Fittings		PIPEWORK - FITTINGS AND VALVES				
Plastic Pipe Fittings		PN10 HDPE Compression fitting to DIN 8074/BS 5114				
3.1 OD90mm No. 4		•				
Unequal tees	3	Equal tees				
3.2 OD90 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers OD90mm OD75mm No. Rate Only Rate Only Find caps OD63mm No. 5	3.1	OD90mm	No.	4		
3.2 OD90 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers OD90mm OD75mm No. Rate Only Rate Only Find caps OD63mm No. 5		Unequal tees				
Plastic Pipe Fittings			No.	1		
4 Couplers 4.1 OD90mm 4.2 OD75mm No. Rate Only Rate Only No. Rate Only No. No.		•				
4.1 OD90mm 4.2 OD75mm No. Rate Only No. Rate Only No. OD63mm No. Rate Only No. S		Plastic Pipe Fittings				
4.2 OD75mm	4	<u>Couplers</u>				
5 <u>End caps</u> 5.1 OD63mm No. 5		OD90mm	No.			
5.1 OD63mm No. 5	4.2	OD75mm	No.	Rate Only		
5.1 OD63mm No. 5	5	End caps				
			No.	5		
	0.2					
Total Carried to Collection						

_	o.4 : DISTRIBUTION NETWORK		1	 	A 1
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	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	DN75mm	No.	Rate Only		
7.2	DN65mm	No.	Rate Only		
7.3	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	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	24		
	Total Carried to Collection				

Region: North

em lo. Description		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 16				
	Page 17				

Region: North

Scheme ID. 1.3: ALAKE IN DOKOLO DISTRICT

BILL SUMMARY

WORK ITEMS	
1 Abstraction and Electromechanical Works	
2 Transmission Mains	
3 Storage Reservoir Works	
4 Distribution Network	
Total Carried to Grand Summary	

Scheme ID. 1.3: ALAKE IN DOKOLO DISTRICT

	e ID. 1.3: ALAKE IN DOKOLO DISTRICT		Region:	North	
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	1.00		
	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		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
2	as shown in the drawings with the following materials: -	3	10		
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		

Total Carried to Collection

	E ID. 1.3: ALAKE IN DOKOLO DISTRICT		Region:	North	
Item No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS 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	2200mm 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	2200mm 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. 1200mm diameter; length n.e 8.0m	Item	1		
8	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. 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		
	Total Carried to Collection				

	e ID. 1.3: ALAKE IN DOKOLO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8	, ,	, ,
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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		

Region: North

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
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) 7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 70m 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	16mm ² Borehole drop cable,	m	5				
ME10	16mm² 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				
	Total Carried to Collection						

Region: North

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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		
	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		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		

Region: North

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		
	<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	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	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				
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			, ,	
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, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanised irion 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	Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths	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 PN16	m	325		
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 16				
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		

	e ID. 1.3: ALAKE IN DOKOLO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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	DN100mm PN10	No.	Rate Only		
	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 ,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		
9.1	DNOSHIII	INO.			
)	Total Carried to Collection lo. 2 : TRANSMISSION MAINS			-	
item				Rate	Amount
No.	Description	Unit	Qty.	(UGx.)	(UGx.)

Scheme ID. 1.3: ALAKE IN DOKOLO DISTRICT Region: North

Schem	e ID. 1.3: ALAKE IN DOKOLO DISTRICT	_	Region:	North	
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10a	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				
	adown pipe, complete as specified and to the following deputis				
10b	Depth not exceeding 1.5m	No.	1		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	50		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	Rate Only		
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	15		
	Total Carried to Collection				

Region: North

em o.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				

Region: North

BILL N	o. 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 2.1	Reservoir Tower 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; 6.0m for 30m³ Tank.	No.	1		
2.1	rieignt, com for som fank.				
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
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.	Rate Only		
4.3	DN65mm, PN10 DN50mm, PN10	No.	1 Rate Only		
4.4	Total Carried to Collection	No.	. tale only		
L	i stai sairiea to solicetisti				

Region: North

BILL N	o. 3 : STORAGE RESERVOIR WORKS		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 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				
	Page 13				
	Total Bill No.3 Carried to Bill Summary				

ILL N	Io.4 : DISTRIBUTION NETWORK		Region:		
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, 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	170		
2.3	OD90mm PN6	m	364		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	<u>Plastic Pipe Fittings</u>				
3	Equal tees				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
	Unequal tees				
3.4	OD90 x 75mm	No.	1		
3.5	OD90 x 63mm	No.	4		
	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		
	Total Carried to Collection				

Region: North

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5	End caps				
5.1	OD63mm	No.	Rate Only		
5.2	OD50mm	No.	5		
6	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.				
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		
7.3	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	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
BII I N	Total Carried to Collection lo. 4 : DISTRIBUTION NETWORK				
Item		116.14	04:	Rate	Amount
No.	Description	Unit	Qty.	(UGx.)	(UGx.)

Scheme ID. 1.3: ALAKE IN DOKOLO DISTRICT	Region:	North	
Bill No. 4 Collection			
Page 14			
Page 15			
Total Bill No. 4 Carried to Bill Summary			

Region: North

Scheme ID. 1.4: LWALA IN KWANIA DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1.0	Abstraction and Electromechanical Works	
2.0	Transmission Mains	
3.0	Storage Reservoir Works	
4.0	Distribution Network	
	Total Carried to Grand Summary	

L No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			North	
m Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
General Site Clearance				, ,
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	1.00		
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 or site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	1			
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	60		
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.				
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: -	-			
Selected excavated material including topping with a 200mm thick layer of top vegetable soil. Total Carried to Collection	/ m³	10		

Region: North

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with	m^2	40		
	excavated topsoil and preparation of surfaces.				
	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	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	2200mm Diameter v 150mm thick Crade C25 concrete ten alah rainferend	Item	1		
0.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a	item	ı		
	steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	steer hour difference of the moderation cover (inc).				
	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	1200mm diameter; height n.e 8m	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		
4.0					
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump. Total Carried to Collection				
BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	·	Oill	Ψιy.	rate (UUA.)	(UGx.)
	Bellmouths			T	
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all	i	i	1	

Schem	e ID. 1.4: LWALA IN KWANIA DISTRICT		Region:	North	
	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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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				

	e ID. 1.4: LWALA IN KWANIA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow $Q = 20 \text{ m}^3/\text{hr.}$, rated head $H = 100\text{m}$ 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 - 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	175		
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. Total Carried to Collection	Item	1		

	e ID. 1.4: LWALA IN KWANIA DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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/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	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				

Item No. Pences		e ID. 1.4: LWALA IN KWANIA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
X6a Calvarnised 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. 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. Gates X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. X8 Training of 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 Operation and Maintenance Manuals X9 Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval 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. Total Carried to Collection Bill No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	Item		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
barbed wire on top; height 2-2.5m at the Pumping Station Site. Gates X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff 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 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. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	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		50		
Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff	X6b		m	10		
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 Operation and Maintenance Manuals X9 Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval 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. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the	No.	2		
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. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	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	Sum	1		
pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005. Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	X9	Provide Operation and Maintenance Manuals as specified and to the Project	Sum	1		
Total Carried to Collection BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Item No. Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6	XX	pipe mounted on fabricated GI support structure including a floating suction	Item	Rate Only		
Description Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6		Total Carried to Collection				
No. Description (UGx Bill No. 1 Collection Page 2 Page 3 Page 4 Page 5 Page 6		Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1	1	1	
Page 2 Page 3 Page 4 Page 5 Page 6		·				Amount (UGx.)
Page 3 Page 4 Page 5 Page 6		Bill No. 1 Collection				
Page 4 Page 5 Page 6		Page 2				
Page 5 Page 6		Page 3				
Page 6		Page 4				
		Page 5				
Page 7		Page 6				
Total Bill No. 1 Carried to Bill Summary		Page 7				

Region: North

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				
	Galvanised irion 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	332		
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		
	Total Carried to Collection	<u> </u>			

RIII N	e ID. 1.4: LWALA IN KWANIA DISTRICT o.2 : TRANSMISSION MAINS		Region:	North	
ltom	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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 16, 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 PN16	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8.1	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, PN16	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, PN16	No.	1		

Region: North

BILL N	Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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.	Rate Only		
	Reinstatement				
11	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11.1	Not exceeding DN300mm	m	Rate Only		
12	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	120		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	Rate Only		
	Concrete Stools and Thrust Blocks Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
40	0.1-0.2 m³, for the following pipe sizes	NI-	Data Oalu		
13	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	nr	15		
	Total Carried to Collection			l	
BILL N	lo. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	I .				(

Scheme ID. 1.4: LWALA IN KWANIA DISTRICT	Re	gion:	North	
Bill No. 2 Collection				
Page 8				
Page 9				
Page 10				
Total Bill No. 2 Carried to Bill Summary				

	e ID. 1.4: LWALA IN KWANIA DISTRICT o. 3 : STORAGE RESERVOIR WORKS		Region:	North	
Item No.	Description 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 Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
4 4.1 4.2 4.3	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:- DN100mm, PN10 DN75mm, PN10 DN65mm, PN10	No. No. No.	Rate Only 1 Rate Only		
	Total Carried to Collection				

Region: North

BILL N	lo. 3 : STORAGE RESERVOIR WORKS		3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
J	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN100mm, PN10	No.	Rate Only		
5.2	DN75mm, PN10	No.	1		
5.3	DN65mm, PN10	No.	Rate Only		
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 200mm thick murram fill.	No.	Rate Only		
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		
7.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Dravisian and Dissipa of Consusts				
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
	Ordinary Designed with Concrete				
8	Decigned mix congrets, to BS 5329, with ordinary portland coment to				
U	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		
0.1	<u> </u>	m.			
BII I N	Total Carried to Collection lo. 3 : STORAGE RESERVOIR WORKS				
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary		<u> </u>	<u> </u>	
	· · · · · · · · · · · · · · · · · · ·				

	e ID. 1.4: LWALA IN KWANIA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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				
0.4	ODGG DNG		005		
2.1	OD63mm PN6	m	285		
2.2	OD75mm PN6	m	288		
	PIPEWORK - FITTINGS AND VALVES				
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	2		
3.2	OD63mm	No.	1		
	<u>Unequal tees</u>				
3.8	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		
4.3	OD63mm	No.	Rate Only		
•			,		
5	End caps				
5.1	OD50mm	No.	5		
	Total Carried to Collection	<u> </u>		1	
	i otal Carried to Collection				

Scheme ID. 1.4: LWALA IN KWANIA DISTRICT

	e ID. 1.4: LWALA IN KWANIA DISTRICT		Region:	North	
Item No.	lo.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.2	OD90mm	No.	Rate Only		
6.3	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.				
7.2	DN75mm	No.	1		
7.3	DN65mm	No.	Rate Only		
7.0	Broomin	140.	,		
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.	5		
	Other Directoris Anaillerine				
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	18		
	Total Carried to Collection	111	10		
	Bill No. 4 Collection			1	
	Page 14				
	Page 15				
-	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 1.5: ABEIBUTI IN OYAM 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: North

BILL N	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				
	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				
2.6	drawings. Marshy soils	3	16		
2.7	Soft / decomposed rock soils	m ³	8		
۷.۱	Soft / decomposed fock softs	m ⁻	O		
3	Filling Structures Filling to precast concrete sump structure by methods specified and to depths Selected excavated material including topping with a 200mm thick layer of top/	m ³	10		
Ĭ	vegetable soil.	""			
	Total Carried to Collection	<u> </u>	<u> </u>	1	

	e ID. 1.5: ABEIBUTI IN OYAM DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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.	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: -				
5	Insitu Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m^3	0.25		
6.1	2200mm 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	2200mm 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. 1200mm diameter; height n.e. 8m	Item	1		
8	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.	No	2		
0	200mm ND and not exceeding 0.5m length Adaptors	No.			
9	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-	No.	2		
	Total Carried to Collection				

Region: North

J.LL 1	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ı	, ,	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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 Total Carried to Collection	nr	Rate Only		

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		. tog.o		
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) 7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 70m 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 - 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	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		
	Total Carried to Collection				

Region: North

BILL N	BILL No.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 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/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				
	Total Carried to Collection						

	e ID. 1.5: ABEIBUTI IN OYAM DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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		
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	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		
50 L N	Total Carried to Collection				
	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	T 1	
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				

Region: North

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 3.1	Galvanised irion 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 HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN16 PIPEWORK - FITTINGS AND VALVES	m m	Rate Only 12 420		
5 5.1 6	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 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	No.	4		
6.1	DN65mm PN10	No.	1		
7 7.1	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters OD90 female adapter	No.	2		

Region: North

Air Valves 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. DN65mm Washouts Washouts Washouts 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.	No.	1		
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. DN65mm 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		1		
o 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. ON65mm Washouts Vashout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap ralve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to		1		
nstallation on pipes of the following sizes, all to PN10, include chamber is specified. Nashouts Nashout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap ralve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to	No.	1		
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.	1		
Nashouts Vashout 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.	1		
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.	1		
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.	1		
Vashout 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				
compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to nake the complete installation on pipes of the following sizes; all to				
ralve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to				
nake 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				
Masonry air valve chamber, complete as specified in the drawings, and				
of the following depths				
Depth not exceeding 1.5m	No.	2		
/alve Surface Boxes				
·				
lown pipe, complete as specified and to the following depths				
Depth not exceeding 1.5m	No.	2		
Reinstatement				
Roads				
Breaking up, temporary and permanent reinstatement of gravel roads for				
he following pipe sizes				
Not exceeding DN300mm	m	Rate Only		
	Masonry air valve chamber, complete as specified in the drawings, and f the following depths Depth not exceeding 1.5m Malve Surface Boxes Malve Surface Boxes Malve surface box for DN100 - DN300 valves, with lockable cover ecurely attached to main body of surface box by chain or bolt, include own pipe, complete as specified and to the following depths Meleinstatement Moads Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified in the drawings, and for the following depths Masonry air valve chamber, complete as specified and to the following depths Masonry air valve chamber, complete as specified and to the following depths Masonry air valve chamber, complete as specified and to the following de	Masonry air valve chamber, complete as specified in the drawings, and f the following depths Depth not exceeding 1.5m No. Malve Surface Boxes Malve surface box for DN100 - DN300 valves, with lockable cover decurely attached to main body of surface box by chain or bolt, include own pipe, complete as specified and to the following depths Depth not exceeding 1.5m No. Meinstatement Roads Masonry air valve chamber, complete as specified in the drawings, and for the following depths No. Malve Surface Boxes Malve Surface box for DN100 - DN300 valves, with lockable cover decurely attached to main body of surface box by chain or bolt, include own pipe, complete as specified and to the following depths No. Meinstatement Roads Modern Chambers No. Modern Chambers Masonry air valve chamber, complete as specified in the drawings, and for the following depths No. Modern Chambers No. M	Masonry air valve chamber, complete as specified in the drawings, and if the following depths Depth not exceeding 1.5m No. 2 Valve Surface Boxes Calve surface box for DN100 - DN300 valves, with lockable cover ecurely attached to main body of surface box by chain or bolt, include own pipe, complete as specified and to the following depths Depth not exceeding 1.5m No. 2 Reinstatement Roads Areaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm Rate Only	Masonry air valve chamber, complete as specified in the drawings, and if the following depths Depth not exceeding 1.5m No. 2 Malve Surface Boxes Valve Surface box for DN100 - DN300 valves, with lockable cover ecurely attached to main body of surface box by chain or bolt, include own pipe, complete as specified and to the following depths Depth not exceeding 1.5m No. 2 Reinstatement Roads Depth representation of gravel roads for the following pipe sizes Not exceeding DN300mm Rate Only

	e ID. 1.5: ABEIBUTI IN OYAM DISTRICT Io.2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				, ,
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	40		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	12		
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		
511 L A	Total Carried to Collection				
Item No.	Io.2 : TRANSMISSION MAINS 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>	

Region: North

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				ì
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower				
	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 30m³ Tank.	No.	1		
3	<u>Tanks</u>				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and overflow				
	connection complete with access points, ventilators (2 nr), and internal				
	access ladders, inclusive of anti-rust painting internally, finishes and all				
	necessary accessories to installation complete as specified and detailed				
	in the drawings; to the Engineer's satisfaction. All tank accessories shall				
	be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	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	DN75mm, 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				
5	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring :-				
	[OPTIONAL]				
.1	DN75mm, PN10	No.	1		
-			•		

	e ID. 1.5: ABEIBUTI IN OYAM DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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 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		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				

Per No. Description Description Demolition And Site Clearance General Site Clearance General 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. 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 OD90mm PN10 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3 Equal tees OD90mm No. 3 Unequal tees OD90 x 75mm No. 1 OD90 x 63mm PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers OD75mm No. Rate Only Rate Only Amour (UGx.) Amour (Ugx		e ID. 1.5: ABEIBUTI IN OYAM DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	North	
DEMOLITION AND SITE CLEARANCE General Site Clearance 1 General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing free stumps and disposal of arising materials. 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 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3 Equal tees OD90 x 75mm OD90 x 63mm PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers Couplers OD75mm No. Rate Only Rate Only Find caps	Item No.		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1 General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. 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 2.2 OD90mm PN10 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3 Equal tees OD90mm No. 3 Unequal tees OD90 x 75mm OD90 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers Couplers OD75mm No. Rate Only Find caps		DEMOLITION AND SITE CLEARANCE				. ,
route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Plastic Pressure Pipes - Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid interach to the following depths not exceeding 1.5m OD63mm PN10 OD90mm PN10 PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3		General Site Clearance				
Plastic Pressure Pipes - Distribution	1	route, including felling trees, grabing tree stumps and disposal of arising		1		
HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m		PIPEWORK-PIPES				
trench to the following depths not exceeding 1.5m D063mm PN10 m 360 m 285	2					
2.1 OD63mm PN10		HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
DD90mm PN10		trench to the following depths not exceeding 1.5m				
PIPEWORK - FITTINGS AND VALVES PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. 3	2.1	OD63mm PN10	m	360		
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings	2.2	OD90mm PN10	m	285		
Plastic Pipe Fittings		PIPEWORK - FITTINGS AND VALVES				
Plastic Pipe Fittings		PN10 HDPF Compression fitting to DIN 8074/BS 5114				
No. 3						
No. 3	3	Equal tees				
No. 1 No. 3 No. No. No. No. No. No. No. Rate Only Send caps No. Rate Only No.	3.1	1 :	No.	3		
No. 1 No. 3 No. No. No. No. No. No. No. Rate Only Send caps No. Rate Only No.		Unequal tees				
OD90 x 63mm No. 3 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings Couplers OD75mm No. Rate Only End caps	3 2		No	1		
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 4 Couplers OD75mm						
Plastic Pipe Fittings Couplers OD75mm No. Rate Only End caps	0.0	OD90 X OSHIIII	INO.			
4		PN10 HDPE Compression fitting to DIN 8074/BS 5114				
4.1 OD75mm No. Rate Only 5 End caps		Plastic Pipe Fittings				
4.1 OD75mm No. Rate Only 5 End caps	4	Couplers				
	4.1		No.	Rate Only		
	5	End caps				
	5.1		No.	5		
Total Carried to Collection		Total Cowind to Collection				

Region: North

	io.4 : DISTRIBUTION NETWORK		ixegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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.	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	20		
RILL N	Total Carried to Collection o. 4 : DISTRIBUTION NETWORK				
Item				.	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 1.6: BUNG IPONGA IN OYAM 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. 1.6: BUNG IPONGA IN OYAM DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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	84		
2.5	Soft / decomposed rock soils	m ³	21		
	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: North

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	2200mm 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	2200mm 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. 1200mm diameter; height n.e. 8m	Item	1		
8	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. 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		

	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		, ,
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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				

Region: North

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 = 70m 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	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		

	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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/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		
			I	ī	

	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT		Region:	North	
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
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		
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				
Item	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description				Amount
No.	Bill No. 1 Collection				(UGx.)
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

Region: North

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	Galvanised irion 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 OD75mm HDPE PN16	m	340		
J. 1	PIPEWORK - FITTINGS AND VALVES	111	340		
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, to BS EN 10242:1995, 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 PN16 PN16 HDPE Compression fitting to DIN 8074/BS 5114	No.	1		
7 7.1	Equal Adapters OD90 female adapter	No.	2		

	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT o. 2 : TRANSMISSION MAINS		Region:	1401611	
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.				
	<u>ao speailea.</u> DN65mm, PN16	No.	1		
J. 1	DNOSHIII, FINTO	NO.			
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, PN16	No.	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.	2		
10.1	Depth not exceeding 1.5m	INO.	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.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11	Not exceeding DN300mm	m	16		

	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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	Rate Only		
	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	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	15		
	Total Carried to Collection				
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>	<u> </u>		

Region: North

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 Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
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 soal ring:				
4.1	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		

Region: North

14	Io. 3 : STORAGE RESERVOIR WORKS				A a
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 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		
8.2	Grade C20	m ³	Rate Only		
	Total Carried to Collection			<u> </u>	
	lo.3 : STORAGE RESERVOIR WORKS	Ī	1		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
				I	

BILL N	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT Io.4: DISTRIBUTION NETWORK		Region:		
ltem 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	462		
2.2	OD75mm PN6	m	192		
2.3	OD90mm PN6	m	235		
	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 63mm	No.	1		
3.5	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		
4.3	OD63mm	No.	Rate Only		
5	End caps				

	e ID. 1.6: BUNG IPONGA IN OYAM DISTRICT o.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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.				
7.3	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: -				
8.4	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	<u> </u>			

Region: North

Scheme ID. 1.7: ODYEBO IN OYAM DISTRICT

BILL SUMMARY

WORK ITEMS 1 Abstraction and Electromechanical Works 2 Transmission Mains 3 Storage Reservoir Works 4.0 Distribution Network	Bill No.	Description	Amount (UGx.)
Transmission Mains Storage Reservoir Works 4.0 Distribution Network		WORK ITEMS	
3 Storage Reservoir Works 4.0 Distribution Network	1	Abstraction and Electromechanical Works	
4.0 Distribution Network	2	Transmission Mains	
	3	Storage Reservoir Works	
	4.0	Distribution Network	
Total Carried to Grand Summany		Total Carried to Grand Summary	

	e ID. 1.7: ODYEBO IN OYAM DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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 top/	${\sf m}^3$	10		
	vegetable soil. Total Carried to Collection			1	

	e ID. 1.7: ODYEBO IN OYAM DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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	2200mm 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	2200mm 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. 1200mm diameter; height n.e. 8m	Item	1		
8	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. 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		

	e ID. 1.7: ODYEBO IN OYAM DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		, ,
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	ltem	Rate Only		
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		

Region: North

Description Description Unit	n 1	Rate (UGx.)	Amount (UGx.)
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. 12x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring. 13 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 14 PV Disconnect 1000-40-2 15 PV Protect 1000-15, SPD x 1 on incoming solar PV. 16 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. 17 PV Combiner 18 No. 18 Sinewave filter - SWAP0022D.	m 1		
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. ME2 2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump 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 ME4 PV Disconnect 1000-40-2 No. 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. No. Sinewave filter - SWAP0022D. No.	m 1		
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. AE2 2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring. AE3 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 AE4 PV Disconnect 1000-40-2 AE5 PV Protect 1000-15, SPD x 1 on incoming solar PV. AE6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. AE7 PV Combiner No. AE8 Sinewave filter - SWAP0022D. No.	m 1		
system complete including wiring. 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 PV Disconnect 1000-40-2 No. PV Protect 1000-15, SPD x 1 on incoming solar PV. No. ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. PV Combiner No. Pressure Switch and Gauge - P6/12 No. Sinewave filter - SWAP0022D. No.			
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 PV Disconnect 1000-40-2 No. PV Protect 1000-15, SPD x 1 on incoming solar PV. No. Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. PV Combiner No. PV Combiner No. Sinewave filter - SWAP0022D. No.	m 1		
PV Protect 1000-15, SPD x 1 on incoming solar PV. No. ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. PV Combiner No. Pressure Switch and Gauge - P6/12 No. ME8 Sinewave filter - SWAP0022D. No.			
Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. PV Combiner Pressure Switch and Gauge - P6/12 No. No. Sinewave filter - SWAP0022D. No.	o. 1		
etc. ME7 PV Combiner No. E7a Pressure Switch and Gauge - P6/12 No. ME8 Sinewave filter - SWAP0022D. No.	o. 1		
Pressure Switch and Gauge - P6/12 No. No. No.	m 1		
ME8 Sinewave filter - SWAP0022D. No.	o. 1		
	o. 1		
1E9 10mm² Borehole drop cable, m	o. 1		
	5		
E10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	175		
E10a 6mm² UV Single Cable.	60		
E11 Wire kit array from solar array to controller with MC4 connectors No.	o. 2		
E11a Adapter box No.			
Pump mechanical control fittings as detailed on the Pump House Drawings No. Item OIS/PH/001 - Sheets 3 & 4 of 4. Total Carried to Collection). 1		

	e ID. 1.7: ODYEBO IN OYAM DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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/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	Rate Only		
	Total Carried to Collection	<u> </u>			

Region: North

	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
	Total Carried to Collection				
BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem 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				

	e ID. 1.7: ODYEBO IN OYAM DISTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
Item 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		
	PIPEWORKS - PIPES				
2	Steel Pipes				
2.1	Galvanised irion 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				
3.1	OD90mm HDPE PN16	m	330		
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 16				
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		
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 PN16	No	1		
6.1	Total Carried to Collection	No.	1	1	

Region: North

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	PN16 HDPE Compression fitting to DIN 8074/BS 5114				(UGX.)
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				
	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	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.				
).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		
	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				
11	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
1.1	Not exceeding DN300mm	m	12		
	Total Carried to Collection				
11 4	No. 2 : TRANSMISSION MAINS				
LL N em	Description			Rate (UGx.)	Amount

Scheme	e ID. 1.7: ODYEBO IN OYAM DISTRICT		Region:	North	
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	15		
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	16		
	Total Carried to Collection	l			
—	o. 2 : TRANSMISSION MAINS		ı	<u> </u>	• .
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				

Region: North

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		
	materiais.				
2	Reservoir Tower				
	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.				
	lollowing height and reservior capacities.				
2.1	Height; 6.0m for 30m³ Tank.	No.	1		
3	<u>Tanks</u>				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and				
	overflow connection complete with access points, ventilators (2 nr),				
	and internal access ladders, inclusive of anti-rust painting internally,				
	finishes and all necessary accessories to installation complete as				
	specified and detailed in the drawings; to the Engineer's satisfaction. All				
	tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	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		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
_	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring:-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		

Region: North

	o.3 : STORAGE RESERVOIR WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	Landscaping and Walkways	2	150		
0.1	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 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		
	<u>Gates</u>				
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				
	o.3 : STORAGE RESERVOIR WORKS		I		Amount
Item No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary		• · · · · · · · · · · · · · · · · · · ·	•	

	e ID. 1.7: ODYEBO IN OYAM DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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	OD75mm PN6	m	120		
2.2	OD90mm PN6	m	389		
	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.	3		
	Unequal tees				
3.3	OD75 x 63mm	No.	5		
	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				
5.1	OD50mm	No.	5		
	Total Carried to Collection				

	e ID. 1.7: ODYEBO IN OYAM DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Valves			1	
	Flanged CI double orifice air relief valve, DN50mm, as specified			1	
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,			1	
	flange adaptors, distance pieces, and all fittings necessary to make the			1	
	installation on pipes of the following sizes, all to PN10, include chamber			1	
	as specified.			1	
6.1	OD90mm	No.	1	1	
6.2	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic			1	
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,			1	
	flap valve and all other fittings necessary to make the complete			1	
	installation on pipes of the following sizes; all to PN10 including valve			1	
	surface box and stone masonry outfall structure to detail as per			1	
	Drawing No. OIS/NUC/SD/004.			1	
7.1	DN75mm	No.	1	1	
7.2	DN65mm	No.	1		
8	Farm Gate Connections				
Ū	Make DN50mm Irrigation Water Supply Hydrant connection to the			1	
	distribution main, inclusive of PVC compressive ball valve and end			1	
	cap complete with connector pipes and locakable chamber as detailed			1	
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all			1	
	to PN10: -				
8.1	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	Other Pipework Ancillaries			1	
	Marker Posts			1	
9	Marker posts for pipes, gate valves, air valves, washouts	nr	18		
	Total Carried to Collection		1	1	
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary	-	-		

Region: North

Scheme ID. 2.1: KORO ANGALA IN OMORO 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. 2.1: KORO ANGALA IN OMORO DISTRICT		Region:	North	
	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ı		
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				
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	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufaturer's specifications	m ²	Rate Only		
5	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	840		
	Total Carried to Collection			<u> </u>	

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Kegioii.		
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, 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		
	Total Carried to Collection				

Region: North

Item	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			<u> </u>	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(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,	No.	Rate Only		
	flanges to BS 4505, all to PN6.				
	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		
				1	

	e ID. 2.1: KORO ANGALA IN OMORO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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, Stainless steel.	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		
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.	0		
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) 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		
	Total Carried to Collection		·		

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.		
No.	Description	Unit	Qty.	Rate (UGx.)	Alliount (UCv.)
	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 - 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	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		
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		
	Total Carried to Collection				

Region: North

Itam					Ama::n4
Item No.	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 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	2		
	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	30		
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		

	e ID. 2.1: KORO ANGALA IN OMORO DISTRICT		Region:	North	
Item No.	lo. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description				Amount (UGx.)
110.	<u>Gates</u>				(00%.)
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>		
	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		T	ı	
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: North

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	Galvanised irion 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 PN16	m	545		
	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 following main pipe sizes DN75mm PN16	No.	1		
V. 1	PN16 HDPE Compression fitting to DIN 8074/BS 5114	110.	'		
7	Equal Adapters OD90 female adapter		2		

	e ID. 2.1: KORO ANGALA IN OMORO DISTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
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.				
8.4	DN75mm, PN16	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				
10a	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				
10b	Depth not exceeding 1.5m	No.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11.1	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	Rate Only		

	e ID. 2.1: KORO ANGALA IN OMORO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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	90		
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	22		
	Total Carried to Collection				
	O. 2 : TRANSMISSION MAINS		T	ı	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 17.2 Collection				
	Page 9				
	Page 10				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary	<u> </u>			

Region: North

BILL N	o. 3 : STORAGE RESERVOIR WORKS		J		
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 Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.		1		
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
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		
	Total Carried to Collection			1	

Region: North

BILL N	o. 3 : STORAGE RESERVOIR WORKS		rtegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
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 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				
	o. 3 : STORAGE RESERVOIR WORKS		I	 	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No3 Collection				
	Page 14				
	Page 15				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 2.1: KORO ANGALA IN OMORO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(00)
	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	200		
2.2	OD75mm PN6	m	335		
	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				
3.4	OD75 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps				
5.4	OD63mm	No.	6		
0.4		140.			
	Total Carried to Collection		<u> </u>	<u>'</u>	

Region: North

	o.4 : DISTRIBUTION NETWORK		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.3	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.				
7.3	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: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	nr	16		
	Total Carried to Collection				
	o. 4 : DISTRIBUTION NETWORK		I		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 2.2: OCAGA IN OMORO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
18.1	Abstraction and Electromechanical Works	
18.2	Transmission Mains	
18.3	Storage Reservoir Works	
18.4	Distribution Network	
	Total Carried to Grand Summary	

Region: North

BILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ixegion.		
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		
	Landscaping				
2	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 12m ² at Intake Site and 800m ² at Pump Station.	m ²	920		
3	Reinforced concrete pipe support/ pedestal to detail as per Drawing No. OIS/NUC/SD/010	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		
	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 $H = 70\text{m}$ 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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval		1		
	Total Carried to Collection				

	e ID. 2.2: OCAGA IN OMORO DISTRICT		Region:	North		
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 - 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	225			
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 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			
Total Carried to Collection						

	e ID. 2.2: OCAGA IN OMORO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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.	0		
	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	Rate Only		
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	40		
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				

Region: North

	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		•	.	
Item No.	Description				Amount (UGx.)
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		
	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				
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1			
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary		-	-	

	e ID. 2.2: OCAGA IN OMORO DISTRICT o. 2 : TRANSMISSION MAINS		Region:	North	
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	Galvanised irion 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	Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN16	m	496		
	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				
6.1	<u>following main pipe sizes</u> DN75mm PN16	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD90 female adapter	No.	2		
1.1	Total Carried to Collection	140.		<u> </u>	

	e ID. 2.2: OCAGA IN OMORO DISTRICT		Region:	North	
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.	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	Rate Only		
	Surrounds Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
14.1	Total Carried to Collection	111	rate only	<u> </u>	

	e ID. 2.2: OCAGA IN OMORO DISTRICT Io.2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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	30		
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				
	0.1-0.2 m , 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	16		
	Total Carried to Collection				
	Io. 8.2 : TRANSMISSION MAINS		•		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	r aye o				
	Total Bill No. 2 Carried to Bill Summary				

Region: North

BILL N	lo. 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 Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
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	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		

Region: North

BILL N	lo. 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 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 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				
7.1	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	lo. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 18.3 Collection				
	Page 9				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 2.2: OCAGA IN OMORO DISTRICT o.4: DISTRIBUTION NETWORK		Region:	NOTUI	
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	l m	225		
2.2	OD75mm PN6	l m	298		
۷.۷	OB/OHIII 1 NO	'''	250		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	1		
	Unequal tees				
3.2	OD90 x 63mm	No.	2		
3.3	OD75 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
5	End caps				
5.4	OD63mm	No.	4		
	Total Carried to Collection		<u> </u>	<u>. </u>	

Region: North

BILL N	o.4: DISTRIBUTION NETWORK		3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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.	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.	4		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	nr	21		
יי ניום	Total Carried to Collection				
	o. 4 : DISTRIBUTION NETWORK			 	A
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				•
	Page 11				
	·				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 2.3: OPUKOMONY IN OMORO DISTRICT

BILL SUMMARY

Amount (UGx.)
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Scheme ID. 2.3: OPUKOMONY IN OMORO DISTRICT

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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		
	Landscaping				
2	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 12m² at Intake Site and 800m² at Pump Station.	m ²	920		
3	Reinforced concrete pipe support/ pedestal to detail as per Drawing No. OIS/NUC/SD/010	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		
	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 15.0kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 70m total head; set to not more than <u>5m</u> 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 Array 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. 2.3: OPUKOMONY IN OMORO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description 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 - 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	225		
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 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		
	Total Carried to Collection	<u> </u>	1		

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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.	0		
	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	Rate Only		
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	40		
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. 2.3: OPUKOMONY IN OMORO DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description				Amount (UGx.)
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			<u>I</u>	
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
Item 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		
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanised irion 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	Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
3.1	trenches to depths not exceeding 1.5m OD90mm HDPE PN16	m	490		
	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				
6.1	following main pipe sizes DN75mm PN16	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				

Item No. Description	ge_	Qty.	Rate (UGx.)	Amount (UGx.)
Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified to ISO 2441, complete with isolating gate valve to ISO 7259, flanged adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chas specified. DN75mm Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve,	ge - namber			
Flanged CI double orifice air relief valve, DN50mm, as specified to ISO 2441, complete with isolating gate valve to ISO 7259, flanged adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chas specified. 8.1 DN75mm 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve.	ge - namber			
to ISO 2441, complete with isolating gate valve to ISO 7259, fland adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chas specified. 8.1 DN75mm 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve.	ge - namber			
adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chas specified. 8.1 DN75mm 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve,	namber			
 installation on pipes of the following sizes, all to PN10, include chas specified. 8.1 DN75mm Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve. 	namber_			
as specified. 8.1 DN75mm 9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve.				
 8.1 DN75mm Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve. 	No			
9 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve,	No			
Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve,	1.10.	1		
compression pipe fittings; tee, drainage pipes, union ball valve,				
valve, stone masonry outfall structure and all other fittings necess	flap			
varve, eterio maccini y catian eti actare ana an etiror ntungo necesi	sary 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 drawing	s, 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	er			
securely attached to main body of surface box by chain or bolt, in	ıclude			
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 re	oads for			
the following pipe sizes				
Not exceeding DN300mm	m	Rate Only		
Total Carried to Collection				

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT Io.2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Surrounds</u>				,
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes		D . O .		
12.1	Not exceeding DN200mm	m	Rate Only		
	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	30		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
12.1	0.1-0.2 m³, for the following pipe sizes	Na	Rate Only		
13.1	Diameter not exceeding DN200mm	No.	Rate Offig		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	nr	16		
	Total Carried to Collection				
BILL N	o. 8.2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	3				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				
	Total Dill No. 2 Garried to Dill Sulfillially				

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT lo. 3: STORAGE RESERVOIR WORKS		Region:	North	
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 Tower				
	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 30m ³ Tank.	No.	1		
3	Tanks				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and overflow				
	connection complete with access points, ventilators (2 nr), and internal				
	access ladders, inclusive of anti-rust painting internally, finishes and all				
	necessary accessories to installation complete as specified and detailed				
	in the drawings; to the Engineer's satisfaction. All tank accessories shall				
	be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI		1		
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		1		
	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				

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT lo. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 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		
	Dravisian and Blacing of Consusts				
	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				
0.1	grades:	3	2		
8.1	Grade C15	m ³	2		
	Total Carried to Collection	1	<u> </u>	<u> </u>	
	Bill No. 3 Collection				
	Page 9				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary				0

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	North	
ltom	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			
	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 PN6	m			
2.2	OD75mm PN6	m			
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.			
	Unequal tees				
3.2	OD90 x 63mm	No.			
3.3	OD75 x 63mm	No.			
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD90mm	No.			
4.2	OD75mm	No.			
4.3	OD63mm	No.			
5	End caps				
5.1	OD90mm	No.			
			1	1	
5.2	OD75mm	No.			

	e ID. 2.3: OPUKOMONY IN OMORO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.3	OD75mm	No.	1		
6.4	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.	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				
14	Marker posts for pipes, gate valves, air valves, washouts.	nr	21		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 2.4:KIKAITO IN KIRYANDONGO 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	
ĺ	Total Carried to Grand Summary	

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io. 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 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		
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 top/	m^3	10		
	vegetable soil.				
	Total Carried to Collection				

Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 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, maximum aggregate size; 20mm for the following structures: Insitu 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 Tomm thick Grade C25 concrete base 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		e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 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 6.1 2200mm 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. 6.2 2200mm 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). 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 1200mm diameter; height n.e 8m 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 Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 9 200 mm ND No. 2	Item		Unit	Qty.	Rate (UGx.)	
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	4	Turfing for lawns inside fenced off compound; including filling with	m ²	40		·
75mm thick Grade C15 concrete blinding to pump sump base 8.1 2200mm 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. 8.2 2200mm 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). 8 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. 9 1 1 200mm diameter; height n.e 8m		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				
with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float. 6.2 2200mm 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). 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 1200mm diameter; height n.e. 8m	5		m ³	0.25		
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). 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 1200mm diameter; height n.e 8m 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	6.1	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a	Item	1		
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 1200mm diameter; height n.e. 8m	6.2	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a	Item	1		
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. 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	7	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.	Item	1		
Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 9 200 mm ND No. 2	8	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.	No.	2		
		Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
Total Carried to Collection	9	200 mm ND Total Carried to Collection	No.	2		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		•
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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		•		
BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			 	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(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 = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		

Scheme ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Region: Central 2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump Item system complete including wiring. ME3 Sum Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval ME4 PV Disconnect 1000-40-2 No. ME5 PV Protect 1000-15, SPD x 1 on incoming solar PV. ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level Item ME7 **PV** Combiner No. Pressure Switch and Gauge - P5/8 ME7a No. Sinewave filter - SWAP0017D. ME8 No. ME9 10mm² Borehole drop cable, 5 m ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. 225 ME10a 6mm² UV Single Cable. 60 m ME11 Wire kit array from solar array to controller with MC4 connectors No. ME11a Adapter box No. 1 **Total Carried to Collection**

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
X2	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the 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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT		Region:	Central	
Item No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 Galvanized 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	40		
X6b	Galvanized 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		
Х9	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				
	lo. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1	T	<u> </u>	A
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	·			

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item 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, grabbing 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: Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths	m	12		
3	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				
-	Cast or Spun Iron Pipe Fittings				
5	Bends Galvanized iron threaded socket 45° bends, 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	OD90 female adapter	No.	2		

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT lo. 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.				
9.1	DN65mm	No.	Rate Only		
9.2	DN50mm	No.	Rate Only		
0.2	Broomin	110.	,		
	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.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes		D		
11	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection	<u> </u>	1		

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
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	48		
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		
	Other Pipework Ancillaries Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts. Total Carried to Collection	nr	16		
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				

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 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, access 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 reservoir 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/ compression 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		
4.2	DN40mm, PN10	No.	Rate Only		
	150-200 micron union/ compression type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring :-				
			1	1	
	[OPTIONAL]				

	e ID. 2.4:KIKAITO IN KIRYANDONGO 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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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			<u> </u>	
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>	<u> </u>	

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
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, grabbing 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	687		
2.2	OD75mm PN10	m	60		
2.3	OD90mm PN10	m	92		
	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	OD63mm	No.	15		
	Unequal tees				
3.3	OD90 x 75mm	No.	1		
3.4	OD90 x 63mm	No.	3		
3.5	OD75 x 63mm	No.	1		
	<u>Bends</u>				
3.6	OD63mm	No.	1		
	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		
_	Enton				
5 5 1	End caps	Nia	24		
5.1	OD63mm Total Carried to Collection	No.	21	<u> </u>	

	e ID. 2.4:KIKAITO IN KIRYANDONGO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD75mm	No.	4		
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.	5		
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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1		No.	21		
0.1	DN50mm	INO.	21		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	nr	24		
<u> </u>	Total Carried to Collection				
_	o. 4 : DISTRIBUTION NETWORK	ı	I	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary	1	<u> </u>	1	

Region: Central

Scheme ID. 2.5: NYAKAGWENG IN KIRYANDONGO 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. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT		Region:	Central	
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 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 top/	m ³	10		
	vegetable soil.				
	Total Carried to Collection				

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm 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	2200mm 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 1200mm diameter; height n.e 8m	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		

	● ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT 0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
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	$3.0\ x\ 1.5$ 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				
Total Carried to Collection							

Scheme ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT Region: Central BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS						
ltom	Description 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) 7.5kW Submersible Pump Set with 11.05kW Pumping Inverter with Data Module, rated flow Q = 20 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			
	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 Array 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	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		0	
Total Carried to Collection						

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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		
	Alarma Suntana				
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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	Total Carried to Collection		l		

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO 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	Galvanized 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	Galvanized 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				
_	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				
	Total Bill No. 1 Carried to Bill Summary				

Item Description Linit Oty Rate (LIGy) Amou		e ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
General Site Clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing 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 Galvanized steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths 3 HDPE Pipes HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN16 m 415 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters	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; 2.1 Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths 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 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends. 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 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters	1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of	Item	1		
unions/sockets, all to ISO 2531 of the following sizes: Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths 3 HDPE Pipes 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 415 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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 Equal Adapters	2					
HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD90mm HDPE PN16 m 415 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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 littings 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	2.1	unions/sockets, all to ISO 2531 of the following sizes; Galvanised steel pipes with threaded joints, include unions/sockets, all	m	12		
Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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 Equal Adapters		HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m	m	415		
Galvanized iron threaded socket 45° bends, 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 Equal Adapters						
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	4	Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes	No.	4		
Equal Adapters	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 following main pipe sizes	No.	1		
	7		No.	2		

-	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT o. 2 : TRANSMISSION MAINS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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	DN65mm	No.	1		
	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	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	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				
11	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
12	Not exceeding DN300mm	m			
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
13	Not exceeding DN200mm	m	Rate Only		
	Total Carried to Collection			<u>. </u>	

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO 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					
	sizes					
12.2	Not exceeding DN200mm	m	Rate Only			
	Pipe surrounds, of mass concrete, for the following pipe sizes					
12.3	Not exceeding DN200mm	m	Rate Only			
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					
	O. 2 : TRANSMISSION MAINS	1	ı	1 1		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
	Bill No. 2 Collection					
	Page 6					
	Page 7					
	Page 9					
	Page 8					
	Total Pill No. 2 Carried to Pill Summany					
Total Bill No. 2 Carried to Bill Summary						

	Io.3 : STORAGE RESERVOIR WORKS		1	T T	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 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, access 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 reservoir 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/ compression 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		
	150-200 micron union/ compression type clear uPVC Y- Disc Filter, non				
_	corrosive, complete with all fittings, installation on the following GI pipe				
5	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				
	Io. 3 : STORAGE RESERVOIR WORKS		1	1	
tem 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		
	excavated topsoil and preparation of surfaces.		1		

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT 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 200mm thick murram fill.	No.	Region: Rate Only				
7 7.1	Fences Galvanized 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			l			
	o. 3 : STORAGE RESERVOIR WORKS			<u> </u>	Amount		
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						

Scheme ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO 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, grabbing 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				
0.4	OD75mm PN10		20		
2.1 2.2	OD90mm PN10	m	30 195		
2.2	OD63mm PN6	m m	80		
2.0	PIPEWORK - FITTINGS AND VALVES	""	00		
	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		
	Unequal tees				
3.3	OD90 x 63mm	No.	3		
	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	OD50mm	No.	3		
	Total Carried to Collection				

Scheme ID, 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT

	e ID. 2.5: NYAKAGWENG IN KIRYANDONGO DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1.	OD90mm	No.	3		
6.2	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic		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	No.	3		
7.2	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	3		
	Other Pipework Ancillaries				
	Marker Posts		1		
9	Marker posts for pipes, gate valves, air valves, washouts.	nr	30		
	Total Carried to Collection				
BILL N	Io. 4 : DISTRIBUTION NETWORK				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Bill No. 4 Collection			, ,	(UGx.)
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 2.6: KIKUNGURA IN MASINDI 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	

	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT Io. 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, 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		
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 top/	m ³	10		
J	vegetable soil.	111	10		
	Total Carried to Collection				

-	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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		
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		
8	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. 200mm ND and not exceeding 0.5m length	No.	2		
9	Adaptors 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		
	Total Carried to Collection		•		

	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
	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	<u> </u>	<u> </u>		

	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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 19.35kW 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 Array 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 - SWAP0009D.	No.	1		
ME9	6mm 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		<u> </u>		

	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		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		
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/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	60		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
/.0	Total Carried to Collection	L	<u>'</u>		

Region: Central

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		J		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Fences				
X6a	Galvanized 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	Galvanized 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		
	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 N	lo. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	l		Г	
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				

cheme ID. 2.6: KIKUNGURA IN MASINDI DISTRICT IILL No. 2 : TRANSMISSION MAINS		Region:	Central	
tem No.	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
DEMOLITION AND CITE OF FARANCE				
DEMOLITION AND SITE CLEARANCE				
General Site Clearance	Itama	1		
General site clearance 1.5m wide working corridor along the pipeline	Item	'		
route, including felling trees, grabbing tree stumps and disposal of arising materials.				
PIPEWORKS - PIPES				
2 <u>Steel Pipes</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 <u>HDPE Pipes</u>				
HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
trenches to depths not exceeding 1.5m				
3.1 OD75mm HDPE PN10	m	415		
PIPEWORK - FITTINGS AND VALVES				
Cast or Spun Iron Pipe Fittings				
5 Bends				
Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN	<u>L</u>			
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 OD90 female adapter	No.	2		
Total Carried to Collection		<u> </u>		

	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
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	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.	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.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
12	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm Total Carried to Collection	m	Rate Only		

	e ID. 2.6: KIKUNGURA IN MASINDI 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 sizes				
12.2	Not exceeding DN200mm	m	60		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	42		
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		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts.	nr	20		
DII I N	Total Carried to Collection				
Item No.	o. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				(COAI)
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	<u> </u>	<u> </u>	<u> </u>	

eme ID. 2.6: KIKUNGURA IN MASINDI DISTRICT L No. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
m Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
DEMOLITION AND SITE CLEARANCE				
General Site Clearance				
General site clearance including trees, stumps and disposal of aris materials.	sing Item	1		
Reservoir				
Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, wal guardrail, base plates, anchor bolts, nuts, washers, etc., painting a finishes; complete as specified and detailed in the drawings, of the following height and reservoir capacities. Height; 6.0m for (4No. x 10m³ Tanks)	kway/ and	1		
Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyeth 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 wi insect screen, float type water level indicator and outlet/ down pipe a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specification and of the following capacity.	th e with cting			
1 10m ³	No.	4		
150-200 micron union/ compression type clear uPVC Y- Screen F non corrosive, complete with all fittings, installation on the following pipe sizes, pressure ratings and supply of a pair of replacement selement and seal ring: DN65mm, PN10	g GI	1		
150-200 micron union/ compression type clear uPVC Y- Disc Filted corrosive, complete with all fittings, installation on the following GI sizes, pressure ratings and supply of a pair of replacement disk eand seal ring: [OPTIONAL]	pipe			
1 DN65mm, PN10	No.	1		
Landscaping and Walkways				
1 Turfing for lawns inside fenced off compound; including filling with	m ²	150		

Region: Central

	Io. 3 : STORAGE RESERVOIR WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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				
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. 2.6: KIKUNGURA IN MASINDI DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(2 2 3 3 4
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing 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	OD75mm PN6	m	582		
2.2	OD63mm PN6	m	100		
	OD110 to PN 6				
2.3	Depth not exceeding 1.5m	m	120		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	1		
	Unequal tees				
3.2	OD75 x 63mm	No.	5		
	Bends				
3.4	OD75 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD110mm	No.	Rate Only		
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
5	End caps				
5.1	OD110mm	No.	Rate Only		
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	Rate Only		
	Total Carried to Collection				

	e ID. 2.6: KIKUNGURA IN MASINDI DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD110mm	No.	2		
6.2	OD90mm	No.	Rate Only		
6.3	OD75mm	No.	1		
6.4	OD63mm	No.	Rate Only		
0.4	OBOOM	140.	Tutto o.i.,		
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	DN100mm	No.	1		
7.2	DN75mm	No.	1 1		
1.2	DIVI SITILIT	140.	'		
8	Farm Gate Connections				
U	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 lockable 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	45		
	Total Carried to Collection				
BILL N	o. 4 : DISTRIBUTION NETWORK		_		
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Description	Oilit	Qiy.	Nate (UGX.)	(UGx.)
	Bill No. 4 Collection				
	Dill No. 4 Collection				
	Page 13				
	·				
	Page14				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 2.7: NTOOMA IN MASINDI 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. 2.7: NTOOMA IN MASINDI DISTRICT Io. 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, 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 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		
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 top/	m³	10		
	vegetable soil. Total Carried to Collection		<u> </u>		

o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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				
<u>Designed mix</u> , 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				
75mm thick Grade C15 concrete blinding to pump sump base	m^3	0.25		
2200mm 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		
2200mm 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. 1200mm diameter; height n.e. 8m	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.				
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:-				
	No.	2		
	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 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 75mm thick Grade C15 concrete blinding to pump sump base 2200mm 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. 2200mm 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). 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. 1200mm diameter; height n.e 8m 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. 200mm ND and not exceeding 0.5m length Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-200 mm ND	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 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 75mm thick Grade C15 concrete blinding to pump sump base 2200mm 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. 2200mm 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). 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. 1200mm diameter; height n.e. 8m 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. 200mm ND and not exceeding 0.5m length No. Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 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 75mm thick Grade C15 concrete blinding to pump sump base 2200mm 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. 2200mm 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). 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. 1200mm diameter; height n.e 8m 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. 200mm ND and not exceeding 0.5m length Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:- 200 mm ND	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 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 75mm thick Grade C15 concrete blinding to pump sump base 2200mm 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. 2200mm 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). 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. 1200mm diameter; height n.e. 8m 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 PNG and of the following sizes and lengths, including supply of the pipe and as shown in the drawings. 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:- 200 mm ND

Region: Central

	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	Ochilai	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		,
	Bellmouths 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 $\frac{1}{2} \frac{1}{2} \frac{1}{2}$				
	MISCELLANEOUS WORK				
13	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		
	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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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				

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 = $20 \text{ m}^3/\text{hr.}$, 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 Array 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	35mm ² Borehole drop cable,	m	5		
ME10	35mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	525		
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	<u> </u>	·		·

Region: Central

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		3. •		
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		, ,
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/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	Rate Only		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Total Carried to Collection	<u> </u>	<u> </u>	1	

Region: Central

BILL N	Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Ū		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 Galvanized 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	Galvanized 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		
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		1	T	
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				

Region: Central

ILL N	o. 2 : TRANSMISSION MAINS		_		
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, grabbing 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	475		
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 Cast or Spun Iron Pipe Fittings				
5	Bends Galvanized iron threaded socket 45° bends, 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				
	HUHUWITU ITIAITI DIDE SIZES				

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				
0	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				
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	DN75mm	No.	2		
	DIDENVODY MANUAL EQ AND DIDENVODY ANOULI ADIES				
	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	Depth not exceeding 1.5m	No.	2		
44	Value Confess Bours				
11	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				
11.1	Depth not exceeding 1.5m	No.	4		
	Reinstatement				
12	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
12.1	Not exceeding DN300mm	m	12		
	Total Carried to Collection				
	Io. 2 : TRANSMISSION MAINS		I		A
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		

Scheme	e ID. 2.7: NTOOMA IN MASINDI DISTRICT		Region:	Central	
	Pipe surrounds, of imported granular material, for the following pipe				
	Sizes				
12.2	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	425		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
13.1	0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only		
13.1	Diameter not exceeding Divzoomm	INO.	Nate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	nr	30		
	Reinforced concrete pipe supports, complete including foundation				
	bases, straps and bolting, for DN100 - 150 mm pipe to the following				
	<u>heights</u>				
15.1	Height not exceeding 1 m	1	68		
15.2	Height 1 - 1.5 m		12		
B	Total Carried to Collection				
-	o. 2 : TRANSMISSION MAINS		ı	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	. 350 .3				
	Total Bill No. 2 Carried to Bill Summary				

Region: Central

Item	lo3 : STORAGE RESERVOIR WORKS		<u> </u>	_ , ,	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				,
	General Site Clearance				
1	General site clearance 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, access 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 reservoir capacities.				
2.1		No.	1		
2.1	Height; 6.0m for (4No. x 10m³ Tanks)	NO.	ı		
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/ compression 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		
	150-200 micron union/ compression type clear uPVC Y- Disc Filter, non				
_	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring :-				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
				1	

Region: Central

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 200mm thick murram fill.	No.	Rate Only		
7	Ennes				
7 7.1	Fences Galvanized 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		
	ute letice.				
	Provision and Placing of Concrete				
	Ordinary Designed Mix Concrete				
8	Designed with somewhat to DC 5200 with auditors. Desiland somewhat DC				
0	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 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

Region: Central

tem No. Description DEMOLITION AND SITE CLEARANCE	Unit	Qty.		Amount
DEMOLITION AND SITE CLEARANCE		Qιy.	Rate (UGx.)	(UGx.)
General Site Clearance				
General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing 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	198		
2.2 OD90mm PN10	m	230		
PIPEWORK - FITTINGS AND VALVES				
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3 Equal tees				
3.2 OD90mm	No.	3		
Unequal tees				
3.6 OD90 x 75mm	No.	1		
<u>Bends</u>				
3.5 OD90mm	No.	1		
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4 <u>Couplers</u>				
4.2 OD90mm	No.	Rate Only		
4.3 OD75mm	No.	Rate Only		
4.4 OD63mm	No.	Rate Only		
5 End caps				
5.4 OD63mm	No.	5		
Total Carried to Collection	<u> </u>			

Region: Central

BILL N	Io.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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 Drawing				
	No. OIS/NUC/SD/004.				
7.2	DN75mm	No.	2		
7.3	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	nr	25		
	Total Carried to Collection		1		
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary		·		

Region: Central

Scheme ID. 2.8: KINONI IN NAKASONGOLA 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. 2.8: KINONI IN NAKASONGOLA DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 reservior in material other than topsoil. Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
2.4	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. Marshy soils	m ³	48		
2.5	Soft / decomposed rock soils	m ³	12		
2.6	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. Marshy soils	3	16		
	,	m ³	16		
2.7	Soft / decomposed rock soils Filling Structures Filling to precast concrete sump structure by methods specified and to depths	m ³	8		
3	as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		
	Total Carried to Collection		<u> </u>		

-	IE ID. 2.8: KINONI IN NAKASONGOLA DISTRICT No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount
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		
6.1	2200mm 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	2200mm 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	1200mm diameter ; height n.e 8m	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:-				
	<u> </u>	No.	2	1	

Region: Central

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	_		,	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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		
	250mm; as instructed by the Engineer Total Carried to Collection				

	e ID. 2.8: KINONI IN NAKASONGOLA DISTRICT 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)				
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 Array 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	200		
ME10a	6mm² UV Single Cable.	m	60		

Region: Central

BILL N	6.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	Outilian	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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 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		
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		
	Total Carried to Collection				

Region: Central

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	· ·	
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 gauge 500 polythene sheet.	m²	Rate Only		, ,
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
	Fences				
X6a	Galvanized 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	Galvanized 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		
	Total Carried to Collection	l	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				

DEMOLITION AND SITE CLEARANCE General Site Clearance Item 1 1 1 1 1 1 1 1 1 1 1 1 1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of	Item	1		
1 General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing 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; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m Rate Only 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 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of	Item	1		
route, including felling trees, grabbing 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; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m m Rate Only 12 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 mm 680 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends. EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	route, including felling trees, grabbing tree stumps and disposal of	Item	1		
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 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 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 6.1 DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters					
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 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 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 6.1 DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	PIDEWORKS - PIDES				
unions/sockets, all to ISO 2531 of the following sizes; DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m ### MPPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m 3.1 OD90mm HDPE PN10 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes 5.1 DN75mm No. 4 ###################################					
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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 680 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters			Data Oak		
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 680 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters			,		
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trenches to depths not exceeding 1.5m OD90mm HDPE PN10 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	3 HDPE Pipes				
3.1 OD90mm HDPE PN10 m 680 PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fequal Adapters	trenches to depths not exceeding 1.5m				
Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm 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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 Fqual Adapters	3.1 OD90mm HDPE PN10	m	680		
5 Bends Galvanized iron threaded socket 45° bends, 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 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	PIPEWORK - FITTINGS AND VALVES				
5 Bends Galvanized iron threaded socket 45° bends, 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 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	Cast or Spun Iron Pipe Fittings				
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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 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	Galvanized iron threaded socket 45° bends, EN 10242:1995, all to P	PN			
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 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters					
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 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters		No.	4		
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 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters	6 Pulk Flow Motoro				
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					
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					
6.1 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters					
6.1 DN75mm PN10 No. 1 PN16 HDPE Compression fitting to DIN 8074/BS 5114 7 Equal Adapters		_			
7 Equal Adapters		No.	1		
7 Equal Adapters	PN16 HDPF Compression fitting to DIN 8074/BS 5114				
	-				
7.1 ODBO Terriale adapter NO. Z		Ma	2		
	7.1 JODBO Terriale adapter	INO.			

-	e ID. 2.8: KINONI IN NAKASONGOLA DISTRICT o. 2 : TRANSMISSION MAINS		Region:	Central	
ltem	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.				
8.4	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.				
9.3	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				
10a	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				
10b	Depth not exceeding 1.5m	No.	4		
	<u>Reinstatement</u>				
	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	1			

	e ID. 2.8: KINONI IN NAKASONGOLA DISTRICT Io.2 : TRANSMISSION MAINS		Region:	Central	
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		
	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. Total Carried to Collection	nr	30		
BILL N	lo.2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	T. (- D' 1 0 0 1 1 D' 2				
	Total Bill No. 21.2 Carried to Bill Summary				

	e ID. 2.8: KINONI IN NAKASONGOLA DISTRICT Io.3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
	General Site Clearance				
1	General site clearance 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, access 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 reservoir 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/ compression 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	DN75mm, PN10	No.	1		
7.1	DIA SHIII, I TATO	NO.	'		
	150-200 micron union/ compression type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
J	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			1	

Region: Central

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 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 200mm thick murram fill.	No.	Rate Only		
7	Fanna				
7.1	Fences Galvanized 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				
	Statially Designed link controlle				
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	o. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. Collection				
	Page 11				
	Page 12				
	Tatal Dill No. 0.00 and 1.00 Dill 0.				
	Total Bill No.3 Carried to Bill Summary				

	e ID. 2.8: KINONI IN NAKASONGOLA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
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, grabbing 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	525		
2.3	OD90mm PN6	m	470		
	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	OD63mm	No.	5		
	Unequal tees				
3.3	OD90 x 63mm	No.	3		
3.4	OD75 x 63mm	No.	1		
	Bends				
3.5	OD63mm	No.	1		
	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		
4 3	End cane				
ა 5.1	End caps OD63mm	No.	13		
J.,					
	Total Carried to Collection				
	וטנמו סמוזוכט נט סטווכטנוטוו				

	e ID. 2.8: KINONI IN NAKASONGOLA DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	OD63mm	No.	Rate Only		
0.0			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.	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	13		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	nr	21		
	Total Carried to Collection				
	Total Garrier to Gollection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	T (D) 1 (D) 2				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 3.1: MERU IN BUVUMA 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. 3.1: MERU IN BUVUMA DISTRICT Io. 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, 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 reservoir 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	90		
2.5	Ditto but in marshy soils	m^3	65		
2.6	Ditto but in soft / decomposed rock soils	m ³	45		
	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	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 manufacturer's specifications	m^2	Rate Only		
5	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	850		
	Total Carried to Collection		1	<u> </u>	

	e ID. 3.1: MERU IN BUVUMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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	m^3	1.1		
	C15, 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 retaining 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 chamfering	m^2	4.0		
	and / or filleting of all exposed concrete corners.				
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly sloping formwork to walls including	m^2	140		
	chamfering and / or filleting of all exposed concrete corners.				
7.0	Finishing of top surfaces	•	4.4		
7.3	Steel trowel finishing of top surfaces.	m ²	11		
	Total Carried to Collection				

	e ID. 3.1: MERU IN BUVUMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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 / 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 Spun 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 m long, and of the following sizes:-				
			<u>_</u>		
9.5	150 mm ND	No.	Rate Only		
	Total Carried to Collection				

	e ID. 3.1: MERU IN BUVUMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		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: -				
9.6	300mm wide x 1000mm high, Stainless steel.	No.	1		
10.1	MISCELLANEOUS METAL WORK Ladders External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as 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.	0		
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				
	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 19.35kW power to the pump system complete including wiring.	Item	1		
	Total Carried to Collection		<u> </u>		

	e ID. 3.1: MERU IN BUVUMA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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 Array 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 - 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		
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		
	Total Carried to Collection				

	e ID. 3.1: MERU IN BUVUMA DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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	60		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	135		
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 Galvanized 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	Galvanized 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		<u> </u>	1	

	e ID. 3.1: MERU IN BUVUMA DISTRICT		Region:	Central	
BILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
No.	Description				Amount (UGx.)
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	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				

	e ID. 3.1: MERU IN BUVUMA 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, grabbing 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 OD63mm HDPE PN10	m	151		
4	uPVC Pipes				
4.1	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, EN 10242:1995, all to				
5.3	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				

	e ID. 3.1: MERU IN BUVUMA 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	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	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.	2		
	W				
	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.	5		
	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				

No. Description Unit Uty. Rate (Udx.) Amount (Udx.)		e ID. 3.1: MERU IN BUVUMA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Pipe surrounds, of selected excavated granular material, for the following pipe sizes 12.1 Not exceeding DN200mm Pipe surrounds, of imported granular material, for the following pipe sizes 12.2 Not exceeding DN200mm M 65 12.3 Not exceeding DN200mm Concrete Stools and Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m², for the following pipe sizes 13 Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts. No. 18 Total Carried to Collection Bill No. 2 Collection Bill No. 2 Collection Page 9 Page 10 Page 11	Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.1 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 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 for pipes, gate valves, air valves, washouts. No. 18 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 9 Page 10 Page 11						
12.1 Not exceeding DN200mm Pipe surrounds, of imported granular material, for the following pipe sizes 12.2 Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes 12.3 Not exceeding DN200mm Concrete Stools and Thrust Blocks Thrust Blocks Thrust Blocks Thrust Blocks 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 Bescription Bill No. 2 Collection Page 9 Page 10 Page 11						
Pipe surrounds, of imported granular material, for the following pipe sizes 12.2 Not exceeding DN200mm Pipe surrounds, of mass concrete, for the following pipe sizes 12.3 Not exceeding DN200mm 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 4 Marker posts for pipes, gate valves, air valves, washouts. No. 18 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 9 Page 10 Page 11	40.4			Data Oak		
12.2 Sizes Not exceeding DN200mm m 65	12.1	Not exceeding DN200mm	m	Rate Only		
12.2 Not exceeding DN200mm		Pipe surrounds, of imported granular material, for the following pipe				
Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m 25		sizes				
12.3 Not exceeding DN200mm	12.2	Not exceeding DN200mm	m	65		
12.3 Not exceeding DN200mm		Pipe surrounds, of mass concrete, for the following pipe sizes				
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. No. 18 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Bill No. 2 Collection Page 9 Page 10 Page 11	12.3		m	25		
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. No. 18 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Bill No. 2 Collection Page 9 Page 10 Page 11		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. No. 18 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Bill No. 2 Collection Page 9 Page 10 Page 11		Thrust Blocks				
13 Diameter not exceeding DN200mm						
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 Item No. Bill No. 2 Collection Page 9 Page 10 Page 11						
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 9 Page 10 Page 11	13		No.	Rate Only		
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 9 Page 10 Page 11		Other Pipework Ancillaries				
Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Description						
BILL No. 2 : TRANSMISSION MAINS Item No. Bill No. 2 Collection Page 9 Page 10 Page 11	14		No.	18		
Description Unit Qty. Rate (UGx.) Amount (UGx.) Bill No. 2 Collection Page 9 Page 10 Page 11 Page 11				•		
No. Description Onit Qty. Rate (UGx.) Amount (UGx.) Bill No. 2 Collection Page 9 Page 10 Page 11	BILL N	Io. 2 : TRANSMISSION MAINS				1
Page 9 Page 10 Page 11	Item No	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Page 9 Page 10 Page 11	110.	Pill No. 2 Collection				
Page 10 Page 11		Bill No. 2 Collection				
Page 10 Page 11						
Page 11		Page 9				
		Page 10				
		Page 11				
Total Bill No. 2 Carried to Bill Summary		Total Dill No. 2 Comical to Dill Comment				

	e ID. 3.1: MERU IN BUVUMA DISTRICT lo. 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 clearance 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, access 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 reservoir capacities.				
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	No.	1		
2.1	ricignt, 4.5m for (4No. x form familia)				
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/ compression type clear uPVC Y- Screen				
	Filter, non corrosive, complete with all fittings, installation on the				
4	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/ compression type clear uPVC Y- Disc Filter,				
J	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		
23 I	IDIN/JIIIII. CINIU	INU.	1 1	1	I

	e ID. 3.1: MERU IN BUVUMA 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 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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.	2		
	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		
0.1	Total Carried to Collection	111	_		
RILLN	lo. 3 : STORAGE RESERVOIR WORKS				
Item		l			
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. 3.1: MERU IN BUVUMA DISTRICT o.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, grabbing 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	151		
2.2	OD90mm PN6	m	263		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	1		
	Heaviel to a				
3.2	Unequal tees OD90 x 63mm	No.	5		
J.Z		INO.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.2	OD90mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	5		
	Total Carried to Collection				

	e ID. 3.1: MERU IN BUVUMA DISTRICT o.4: DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx
6	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.				
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.				
7.3	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 lockable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and				
	all to PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	30		
	Total Carried to Collection				
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 3.2: BWAMULAMIRA IN KAYUNGA 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, 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		
	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

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with	m^2	40		
	excavated topsoil and preparation of surfaces.				
	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	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
V	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).				
	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	1200mm diameter ; height n.e 8m	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		

Region: Central

ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	•	Ullit	Qty.	Rate (UGX.)	(UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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		

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 m³/hr., rated head H = 55m total head; set to not more than <u>5m</u> 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 Array 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	225		
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		1	1	

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
	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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
	Total Carried to Collection	<u> </u>	<u> </u>	1	

Region: Central

Item	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	<u>Fences</u>				,
X6a	Galvanized 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	Galvanized 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		
	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				
	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	1	
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				

Region: Central

	o. 2 : TRANSMISSION MAINS	1		 	
Item No.	Description	Unit	Rate Only	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, grabbing 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	OD75mm HDPE PN10	m	400		
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 Oak		
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, 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				
6.3	DN65mm PN10	No.	1		
0.0	Disconnict 1410	140.	'		
	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				
	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.				
8.3	DN65mm	No.	1		
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.	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.	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				
	Io. 2 : TRANSMISSION MAINS				A ma = 4
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	Surrounds				. ,
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				

•	e ID. 3.2: BWAMULAMIRA IN KAYUNGA DISTRICT Not exceeding DN200mm	m	Region: Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	90		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	20		
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	NI	20		
14	Marker posts for pipes, gate valves, air valves, washouts. Total Carried to Collection	No.	20		
BILL N	lo. 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>		<u> </u>	

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2 2.1	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access 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 reservoir capacities. 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 4.1	150-200 micron union/ compression 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/ compression 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		

Region: Central

BILL N	Io. 3 : STORAGE RESERVOIR WORKS		itegion.	Ochilai	
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 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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				
	following grades:				
8.1	Grade C15	m ³	1		
	Total Carried to Collection				
BILL N	o. 3 : STORAGE RESERVOIR WORKS	1	,	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				

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, grabbing 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	86		
2.2	OD90mm PN6	m	195		
	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 6				
2.2	Depth not exceeding 1.5m	m	280		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	1		
	Unequal tees				
3.2	OD110 x 90mm	No.	2		
3.3	OD110 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4 .1	OD90mm	No.	Rate Only		
•••					
5	End caps				
5.1	OD90mm	No.	Rate Only		
	Total Carried to Collection				

	e ID. 3.2: BWAMULAMIRA IN KAYUNGA DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	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.	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 lockable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	20		
	Total Carried to Collection	<u> </u>			
	Bill No. 4 Collection				
	Page 13				
	Page 14				
-	Total Bill No. 4 Carried to Bill Summary				

Region: Central

Scheme ID. 3.3: BUWUNGIRO IN KAYUNGA 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	

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT Io. 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 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 top/	m^3	10		
	vegetable soil. Total Carried to Collection		<u> </u>		

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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.	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		
6.1	2200mm 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	2200mm 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				
7	to approval. 1200mm diameter ; height n.e 8m	Item	1		
,	1200mm dameter , neight n.e. om	ILEIII	'		
	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:-				

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		, ,
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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				

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
ltem	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)				
	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 <u>5m</u> 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 Array 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	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		
	Total Carried to Collection				

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
	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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	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	1	1		

Region: Central

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				· · · · · ·
X6a	Galvanized 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	Galvanized 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		
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				
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				
_	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			1	
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT		Region:	Central	
Item No.	lo. 2 : TRANSMISSION MAINS 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, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Galvanised steel pipes with threaded joints, include				
	unions/sockets, all to ISO 2531 and to PN10, laid in trench of the				
	following sizes and depths				
	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	290		
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				
5	Bends				
	Galvanized iron threaded socket 45° bends, 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		
-	Total Carried to Collection				

	e ID. 3.3: BUWUNGIRO IN KAYUNGA 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 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	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		
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.	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				
11	Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11.1	Not exceeding DN300mm	m	Rate Only		

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT Io.2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	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	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 Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	15		
	Total Carried to Collection				
BILL N	o. 2 : TRANSMISSION MAINS	1			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

	e ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT Io. 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 clearance 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, access 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 reservoir 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/ compression 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/ compression 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

	lo. 3 : STORAGE RESERVOIR WORKS				Amount
Item 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 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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.	2		
	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				
0.4	grades:	3			
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	o. 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>		

	e ID. 3.3: BUWUNGIRO IN KAYUNGA 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, grabbing 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	235		
2.2	OD75mm PN6	m	108		
2.3	OD90mm PN6	m	248		
	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 6				
2.4	Depth not exceeding 1.5m	m	167		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	1		
3.3	OD75mm	No.	4		
3.4	OD63mm	No.	1		
	Unequal tees				
3.5	OD110 x 90mm	No.	1		
3.6	OD110 x 63mm	No.	3		
3.7	OD90 x 75mm	No.	1		
3.8	OD90 x 63mm	No.	2		
3.9	OD75 x 63mm	No.	1		
	Rondo				
3.10	Bends OD63mm	No	1		
J. 1U		No.	1		
	Total Carried to Collection				

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
110.	PN10 HDPE Compression fitting to DIN 8074/BS 5114				(00x.)
	Plastic Pipe Fittings				
4	Countain				
4 4.1	Couplers OD110mm	No.	Rate Only		
4.1 4.2	OD90mm	No.	Rate Only		
4.2 4.3	OD75mm	No.	Rate Only		
4.3 4.4	OD63mm	No.	Rate Only		
4.4	OD63IIIII	INO.	Trate Only		
5	End caps				
5.1	OD63mm	No.	15		
5.2	OD50mm	No.	Rate Only		
6	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.				
6.1	OD110mm	No.	2		
7	Washauta				
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	DN100mm	No.	2		
7.1	DIVIOUNIN	INO.			
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
8.1	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	15		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker Posts Marker posts for pipes, gate valves, air valves, washouts.	Nο	30		
J	ividinei posta ioi pipea, gate vaivea, ali vaivea, wastiouta.	No.	30		

cheme ID. 3.3: BUWUNGIRO IN KAYUNGA DISTRICT		Region:	Central	
tem No. Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Bill No. 4 Collection				
Page 12				
Page 13				
Total Bill No. 4 Carried to Bill Su	mmarv			

Region: Central

Scheme ID. 3.4: MPANGATI IN LUWERO DISTRICT

BILL SUMMARY

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

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT o. 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				
2.1	Excavation to form trapezoidal prism reservoir 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	345		
2.5	Ditto but in marshy soils	m^3	255		
2.6	Ditto but in soft / decomposed rock soils	m ³	165		
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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	${\sf m}^3$	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 manufacturer's specifications	m^2	Rate Only		
5	Landscaping 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.	m²	1,050		
	Total Carried to Collection		<u> </u>	1	

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central			
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	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 55m total head; set to not more than <u>5m</u> 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 Array 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	120				
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. 3.4: MPANGATI IN LUWERO 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 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				
	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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	Total Carried to Collection				

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT		Region:	Central	
Item No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS 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	Galvanized 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	m	80		
X6b	Galvanized 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		
	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//SD/011.	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				
	Total Bill No. 1 Carried to Bill Summary				

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT lo. 2 : TRANSMISSION MAINS		Region:	Central	
Item 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, grabbing 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	Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths	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	1,263		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5 5.1	Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes DN75mm	No.	4		
J. I	Divisini	INO.	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	No.	2		
	Total Carried to Collection		·		

-	e ID. 3.4: MPANGATI IN LUWERO DISTRICT o. 2 : TRANSMISSION MAINS		Region:	Central	
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.	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				
11	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11.1	Not exceeding DN300mm	m	Rate Only		
12	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the following				
	<u>pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only	1	

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	150		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	60		
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.	40		
DII I N	Total Carried to Collection o. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 15.2 Carried to Bill Summary				

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT lo. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(/
	General Site Clearance				
1	General site clearance 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, access 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 reservoir capacities.				
2.1	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,				
	1				
	as detailed in the drawings, supply specifications and of the following				
	capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compression 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/ compression 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		
J.Z	DINTOHIII, FINIU	INU.	ı		
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with	m ²	150		
	excavated topsoil and preparation of surfaces.	<u> </u>			
	Total Carried to Collection				

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT Io3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 200mm thick murram fill.	No.	Rate Only		, ,
7 7.1	Fences Galvanized 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		
DILL	Total Carried to Collection lo. 3 : STORAGE RESERVOIR WORKS		<u> </u>	l	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				
	Total Bill No.3 Carried to Bill Summary				

	e ID. 3.4: MPANGATI IN LUWERO DISTRICT o.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, grabbing 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	510			
2.3	OD90mm PN6	m	509			
	PIPEWORK - FITTINGS AND VALVES					
	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	OD63mm	No.	1			
	Unequal tees					
3.3	OD90 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	OD63mm	No.	Rate Only			
5	End caps	.,	_			
5.1	OD63mm	No.	4			
Total Carried to Collection						

BILL N	Io.4 : DISTRIBUTION NETWORK		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	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.				
7.2	DN75mm	No.	1		
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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	4		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	21		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				

Region: Central

Scheme ID. 3.5: MAWUNDWE IN MITYANA DISTRICT

BILL SUMMARY

Bill No.	Description 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	

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT Io. 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		
	Landscaping				
2	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		
3	Reinforced concrete pipe support/ pedestal to detail as per Drawings.	No.	2		
4.1	MISCELLANEOUS METAL WORK Pump Protection System Diagonal pipe pump stilling tube/ anti-vandal protection sleeve structure to	Item	1		
7.1	detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	nom	'		
4.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawings.	Item	1		
	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 $Q = 15 \text{ m}^3/\text{hr.}$, rated head $H = 160\text{m}$ 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 Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
	Total Carried to Collection		_		

•	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT o.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 - 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		
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		
Total Carried to Collection					

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
Item No.	Description 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.	0		
	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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
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 Galvanized 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	Galvanized 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		
\/O	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	<u> </u>		I	

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT	Region:	Central				
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS						
Item No.	Description			Amount (UGx.)			
140.				(00%.)			
	Bill No. 1 Collection						
	Page 2						
	Dage 2						
	Page 3						
	Page 4						
	Total Bill No. 1 Carried to Bill Summary						

	e ID. 3.5: MAWUNDWE IN MITYANA 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, grabbing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths				
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	1,248		
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				
4.1	Depth not exceeding 1.5m	m	Rate Only		
5	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN75mm	No.	4		
	Total Carried to Collection				

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
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 ,flanges	ł			
	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.				
8.4	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.	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		
	Total Carried to Collection				

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT lo. 2 : TRANSMISSION MAINS		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u>				
11	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11.1	Not exceeding DN300mm	m	12		
12	Surrounds Discourse and a facilitated assessment of assessment facilities the				
	Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
12.1	itte oxecoung Divizorinii	'''			
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	200		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes		30		
12.3	Not exceeding DN200mm	m	30		
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.	42		
-	Total Carried to Collection	110.	1 12		
	Bill No. 2 Collection				
	Days C				
	Page 6				
	Page 7				
	. 				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

Scheme ID. 3.5: MAWUNDWE IN MITYANA DISTRICT

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT o. 3 : Storage reservoir works		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				, ,
1	General Site Clearance General site clearance 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, access 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 reservoir 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/ compression 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/ compression 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. 3.5: MAWUNDWE IN MITYANA DISTRICT

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT lo. 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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.		Rate Only		
7	Fences				
7.1	Galvanized 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	1		
	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 9				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary	<u> </u>	<u> </u>	<u> </u>	

Scheme ID 3.5: MAWLINDWE IN MITYANA DISTRICT

	e ID. 3.5: MAWUNDWE IN MITYANA 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, grabbing 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	943		
2.2	OD75mm PN6	m	684		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD75mm	No.	3		
3.2	OD63mm	No.	3		
	Unequal tees				
3.3	OD90 x 75mm	No.	Rate Only		
3.4	OD90 x 63mm	No.	Rate Only		
	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				

Scheme ID. 3.5: MAWUNDWE IN MITYANA DISTRICT

	e ID. 3.5: MAWUNDWE IN MITYANA DISTRICT		Region:	Central	
-	o.4 : DISTRIBUTION NETWORK	1	T		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.3	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.				
7.4	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker rosts Marker posts for pipes, gate valves, air valves, washouts.	No.	34		
	markor poolo for pipoe, gate varios, all varios, macriode.	110.			
	Total Carried to Collection				
	. our during to doileann				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary			<u> </u>	
	i otal bili No. 4 Carried to bili Summary				

Region: Central

Scheme ID. 3.6: NVUNANWA IN NAKASEKE 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, 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 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	56		
2.5	Soft / decomposed rock soils	m^3	14		
	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	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		

	e ID. 3.6: NVUNANWA IN NAKASEKE DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central	
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		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-		_		
9	200 mm ND Total Carried to Collection	No.	2		

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		•
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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		

Region: Central

	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		<u> </u>	<u> </u>	A
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 = 15 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 Array 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 - 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		
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				

Cheme ID. 3.6: NVUNANWA IN NAKASEKE DISTRICT SILL No.1: ARSTRACTION AND FLECTROMECHANICAL WORKS		Region:	Central	
Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
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		
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		
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				
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: -				
Straight or curved to a radius exceeding 12 m	m	70		
75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	220		
450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
Pump House_				
Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
<u>Fences</u>				
	Description 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 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. 60W Solar security light and battery complete with 6m steel pole and lockable battery box Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array. GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer. 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. Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: - Straight or curved to a radius exceeding 12 m 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 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.	Description 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 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. 60W Solar security light and battery complete with 6m steel pole and lockable battery box Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array. GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer. 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. Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: - Straight or curved to a radius exceeding 12 m 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 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.	Description 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 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. 60W Solar security light and battery complete with 6m steel pole and lockable battery box Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array. GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer. 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. Kerbs Fre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: - Straight or curved to a radius exceeding 12 m m 70 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet. 450mm diameter reinforced concrete pipe/ culvert m Rate Only Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No. OIS/NUC/PH/001.	Description 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 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. 60W Solar security light and battery complete with 6m steel pole and lockable battery box Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array. GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer. 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. Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: - Straight or curved to a radius exceeding 12 m m 70 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet. 450mm diameter reinforced concrete pipe/ culvert m Rate Only Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No. OIS/NBC/PH/001.

Region: Central

	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6a	Galvanized 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	Galvanized 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		
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		
NII I N	Total Carried to Collection				
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		I		A a
tem No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7		1		

	e ID. 3.6: NVUNANWA IN NAKASEKE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	J	
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, grabbing 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	OD75mm HDPE PN16	m	1,100		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, 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	OD90 female adapter	No.	2		
	Total Carried to Collection				

term No. Sescription Valves and Penstocks Air Valves		e ID. 3.6: NVUNANWA IN NAKASEKE DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	Central	
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. 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. 1 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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads 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	Item No.		Unit	Qty.	Rate (UGx.)	Amount (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. 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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads 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	8	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. 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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads 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		<u>Air Valves</u>				
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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads 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		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. DN65mm No. 1 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 Masonry air valve chamber, complete as specified in the drawings, and of the following depths 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads 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		to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11.1 Not exceeding DN300mm m 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes		adaptors, distance pieces, and all fittings necessary to make the				
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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11.1 Not exceeding DN300mm m 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes		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, 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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11.1 Not exceeding DN300mm m 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes		as specified.				
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 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 Depth not exceeding 1.5m No. 2 Reinstatement Roads 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	8.1	DN65mm	No.	1		
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Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11.1 Not exceeding DN300mm m 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes	10.2	Depth not exceeding 1.5m	No.	2		
Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11.1 Not exceeding DN300mm m 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes		Reinstatement				
the following pipe sizes Not exceeding DN300mm m 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes	11	Roads				
11.1 Not exceeding DN300mm m 12 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes		Breaking up, temporary and permanent reinstatement of gravel roads for				
11.1 Not exceeding DN300mm m 12 12 Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes						
Pipe surrounds, of selected excavated granular material, for the following pipe sizes	11.1	Not exceeding DN300mm	m	12		
following pipe sizes	12	<u>Surrounds</u>				
		Pipe surrounds, of selected excavated granular material, for the				
12.1 Not exceeding DN200mm						
in into choosing Direction	12.1	Not exceeding DN200mm	m	Rate Only		

Region: Central

	Io. 2 : TRANSMISSION MAINS		Region:	Cential				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)			
	Pipe surrounds, of imported granular material, for the following pipe							
	<u>sizes</u>							
12.2	Not exceeding DN200mm	m	180					
	Pipe surrounds, of mass concrete, for the following pipe sizes							
12.3	Not exceeding DN200mm	m	128					
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.	40					
	Total Carried to Collection	<u> </u>						
BILL N	Io. 2 : TRANSMISSION MAINS							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)			
	Bill No. 18.2 Collection				, ,			
	Page 6							
	Fage 0							
	Page 7							
	Page 8							
	Total Rill No. 2 Carried to Rill Summary							
	Total Bill No. 2 Carried to Bill Summary							

Region: Central

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	<u>Erect a welded steel tower for reservoir support complete, include</u> foundations, columns, beams, access 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 reservoir 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/ compression type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
7	pipe sizes, pressure ratings and supply of a pair of replacement screen				
1.1	element and seal ring :-	Na	4		
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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:		
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 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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		
DILL N	Total Carried to Collection o. 3 : STORAGE RESERVOIR WORKS				
ltem	0.3:31 ORAGE RESERVOIR WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 3 Collection				
	Page 9				
	Page 10				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 3.6: NVUNANWA IN NAKASEKE 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, grabbing 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	78		
2.1	OD75mm PN6	m	240		
2.3	OD90mm PN6	m	425		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	2		
	Unequal tees				
3.2	OD90 x 75mm	No.	1		
3.3	OD90 x 63mm	No.	2		
3.4	OD75 x 63mm	No.	2		
	Bends				
3.5	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		<u> </u>		

	e ID. 3.6: NVUNANWA IN NAKASEKE DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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 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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	48		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary			<u> </u>	

Region: Central

Scheme ID. 3.7: MASULITA IN WAKISO 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

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				
2.1	Excavation to form trapezoidal prism reservoir 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		
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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	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 manufacturer's specifications	m²	Rate Only		
	Total Carried to Collection				

	e ID. 3.7: MASULITA IN WAKISO DISTRICT		Region:	Central	
BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount
5	Landscaping 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	rate (OOX.)	(IICx)
	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 = 70m 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 Array 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 - 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	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
	Adapter box	No.	1		
Total C	arried to Collection				

	e ID. 3.7: MASULITA IN WAKISO DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		()		
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				
	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 gauge 500 polythene sheet.	m²	135				
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only				
	Total Carried to Collection						

	e ID. 3.7: MASULITA IN WAKISO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	Central		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
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 Galvanized 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	Galvanized 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.	1			
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					
	Bill No. 1 Collection		_			
	Page 2					
	Page 3					
	Page 4					
	Page 5					
Total Bill No. 1 Carried to Bill Summary						

	e ID. 3.7: MASULITA IN WAKISO DISTRICT lo. 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, grabbing 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		0.55		
3.1	OD90mm HDPE PN10	m	2,234		
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		
5	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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	INU.	4		
6.1	following main pipe sizes DN65mm PN10	No.	1		
DILL	Total Carried to Collection lo. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount
INU.	PN16 HDPE Compression fitting to DIN 8074/BS 5114				(UGx.)

Schem	e ID. 3.7: MASULITA IN WAKISO DISTRICT		Region:	Central	
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 ,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.				
8.3	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.				
9.3	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.	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		
	Total Carried to Collection				

Region: Central

	o. 2 : TRANSMISSION MAINS		Region.	Ochida	
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		
12.2	Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm	m	310		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	95		
13	Concrete Stools and Thrust Blocks Thrust Blocks				
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		
14	Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts.	No.	40		
	Total Carried to Collection		1		
BILL N	o. 2 : TRANSMISSION MAINS			•	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Dill No. 2 Camiled to Dill Commun.				
Total Bill No. 2 Carried to Bill Summary					

-	e ID. 3.7: MASULITA IN WAKISO DISTRICT lo. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 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, access 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 reservoir capacities.	No.	1		
2.1	Height; 4.5m for (4No. x 10m ³ Tanks)	INO.	'		
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 5.1	150-200 micron union/ compression 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/ compression 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					

Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.)	•	e ID. 3.7: MASULITA IN WAKISO DISTRICT o. 3 : STORAGE RESERVOIR WORKS		Region:	Central	
6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. 6.2 500 x 500 x 50m precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill. 7 Fences 7.1 Fences Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. Gates 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: STORAGE RESERVOIR WORKS Bill No. 3 Collection Page 9	Item		Unit	Qty.	Rate (UGx.)	
method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill. 7		Turfing for lawns inside fenced off compound; including filling with	m ²	150		
7.1 Galvanized 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: 8.1 Grade C15 Total Carried to Collection BILL No.3: STORAGE RESERVOIR WORKS Item No. Bill No. 3 Collection Page 9	6.2	method" between the gate, pump house and solar array in one raw, laid	No.	Rate Only		
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 m³ 2 Total Carried to Collection BILL No.3: STORAGE RESERVOIR WORKS Item No. Bill No. 3 Collection Bill No. 3 Collection Page 9		Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of	m	60		
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: STORAGE RESERVOIR WORKS Item No. Bill No. 3 Collection Bill No. 3 Collection Page 9	7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match	No.	1		
BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades: 8.1 Grade C15 m³ 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 9		<u> </u>				
Total Carried to Collection BILL No.3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Bill No. 3 Collection Page 9	8	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the				
BILL No.3 : STORAGE RESERVOIR WORKS Item No. Description Bill No. 3 Collection Page 9	8.1	Grade C15	m ³	2		
Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Bill No. 3 Collection Page 9						
No. Description Unit Qty. Rate (UGx.) (UGx.) Page 9		o.3 : STORAGE RESERVOIR WORKS			ı ı	
Bill No. 3 Collection Page 9		Description	Unit	Qty.	Rate (UGx.)	
		Bill No. 3 Collection				•
Page 10		Page 9				
		Page 10				
Total Bill No. 18.3 Carried to Bill Summary		Total Bill No. 18.3 Carried to Bill Summary			<u> </u>	

	e ID. 3.7: MASULITA IN WAKISO DISTRICT o.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, grabbing 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	OD75mm PN6	m	195		
2.2	OD90mm PN6	m	1,490		
	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	OD75 x 63mm	No.	5		
	Bends				
3.5	OD75 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	6		
5.3	OD50mm	No.	Rate Only		
	Total Carried to Collection				

	e ID. 3.7: MASULITA IN WAKISO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	Central	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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.	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 lockable 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.	No.	60		
	Total Carried to Collection	<u> </u>			
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 4.1: BEDIMWOLO IN ALEBTONG 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: North

BILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		rtogioiii		
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		
	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		
	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 $H = 100\text{m}$ total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
	Total Carried to Collection	•			

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		rtegion.	1101111	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 Array 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	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		
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		
	Total Carried to Collection				

i	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description 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		
	MISCELLANEOUS WORKS				
X1	Pump Protection System 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		
Х3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	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 Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of	m	Rate Only		
λοα	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	Galvanized 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		
	T. (10) 1 (0) "				
	Total Carried to Collection				

	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	1101111	
tem No.	Description				Amoun
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		, ,
	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		
	Stone Pitching. 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. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT		Region:	North	
BILL N	lo. 2 : TRANSMISSION MAINS				
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, grabbing 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	18		
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	332		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN75mm	No.	4		
6	Bulk Flow Meters				
0	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	DN100mm PN10	No.	Rate Only		
6.2	DN75mm 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			<u> </u>	
Total Carried to Collection					

	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT Io.2 : TRANSMISSION MAINS		Region:	North	
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.	Rate Only		
	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.	3		
]	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	Rate Only		
	Total Carried to Collection				

	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT IO. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	Rate Only		
	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.	No.	15		
DII I N	Total Carried to Collection o. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3.2 Collection				(C CAL)
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary	<u> </u>		<u> </u>	

	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(== /
1	General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
4	150-200 micron union/ compression 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/ compression 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. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT Io. 3: STORAGE RESERVOIR WORKS		Region:	North	
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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		
DILLA	Total Carried to Collection Io. 3 : STORAGE RESERVOIR WORKS		ı		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No.3 Collection				
	Page 9				
	Page 10				
_	Total Bill No. 3.3 Carried to Bill Summary	-			

	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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, grabbing 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 PN6	m	85		
2.2	OD75mm PN6	m	132		
2.3	OD90mm PN6	m	275		
	PIPEWORK - FITTINGS AND VALVES				
	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	OD63mm	No.	2		
"-		110.	_		
	Unequal tees				
3.3	OD90 x 75mm	No.	1		
3.4	OD90 x 63mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.1	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
7.5		INU.	. idio only		
5	End caps				
5.1	OD63mm	No.	5		
				<u> </u>	
Total Carried to Collection					

	e ID. 4.1: BEDIMWOLO IN ALEBTONG DISTRICT lo.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	OD63mm	No.	Rate Only		
0.0		110.			
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		
7.2	DN65mm	No.	1 1		
1.2	DNOSHIII	INU.	'		
8	Farm Gate Connections				
O	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No	5		
0.1	DNSOIIIII	No.			
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	18		
3	washouts.	INO.			
	Total Carried to Collection	<u>I</u>		1	
	Bill No. 4 Collection				
	5				
	Page 11				
	Page 10				
	Total Bill No. 4 Carried to Bill Summary	•		<u> </u>	

Region: North

Scheme ID. 4.2: ODOKOMIT IN AGAGO DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1.0	Abstraction and Electromechanical Works	
2.0	Transmission Mains	
3.0	Storage Reservoir Works	
4.0	Distribution Network	
	Total Carried to Grand Summary	

	e ID. 4.2: ODOKOMIT IN AGAGO DISTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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				
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	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		
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 top/	${\sf m}^3$	10		
J	vegetable soil.	m ⁻	10		
	Total Carried to Collection				

Region: North

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with	m^2	40		
	excavated topsoil and preparation of surfaces.				
	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	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	1800mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with	Item	1		
	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).				
	B				
	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				
	1	l	I		
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				

Region: North

BILL	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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				

	e ID. 4.2: ODOKOMIT IN AGAGO DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item	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	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = $25 \text{ m}^3/\text{hr.}$, rated head H = 70m 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		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Array 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		
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		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
	Total Carried to Collection	•	-	-	

Region: North

tem				
Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Pump mechanical control fittings as detailed on the Pump House Drawings No OIS/PH/001 - Sheets 3 & 4 of 4.	o. Item	1		,
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		
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		
IE15 60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
Alarm System IE16 GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
IE17 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/002 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 gauge 500 polythene sheet.	m²	220		
X4 450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
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: North

	IO. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ixegion.	
Item No.	Description			Amount (UGx.)
X6a	Fences Galvanized 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	Galvanized 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.	1	
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.	m ²	125	
	Total Carried to Collection			
	IO. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		T	
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			

	e ID. 4.2: ODOKOMIT IN AGAGO DISTRICT Io.2 : TRANSMISSION MAINS		Region:	North	
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, grabbing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORKS - PIPES Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and depths				
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	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN16	m	300		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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		
BILL N	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				

Scheme	e ID. 4.2: ODOKOMIT IN AGAGO DISTRICT		Region:	North	
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 ,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, PN16	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.				
9.3	DN65mm, PN16	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.	2		
10.1	Deput flot 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				
11	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11.1	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection				

Region: North

•	lo. 2 : TRANSMISSION MAINS		Region.	itorui	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	<u>Surrounds</u>				•
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes		D / O /		
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	30		
	Concrete Stools and Thrust Blocks				
	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	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	15		
BU 1 N	Total Carried to Collection				
	lo. 2 : TRANSMISSION MAINS	I	1	I I	A
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.					(UGX.)
	Bill No.2 Collection				
	Sin No.2 dolloctori				
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	Page 10				
	Total Dill No. 2 Coming to Dill Comment		<u> </u>		
	Total Bill No. 2 Carried to Bill Summary				

Region: North

	Io. 3 : STORAGE RESERVOIR WORKS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
4	150-200 micron union/ compression 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	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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				

•	e ID. 4.2: ODOKOMIT IN AGAGO DISTRICT Io.3 : STORAGE RESERVOIR WORKS		Region:	North	
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.		Rate Only		
7	Fences				
7.1	Galvanized 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	Į			
BILL N	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. 4.2: ODOKOMIT IN AGAGO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				<u> </u>
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing 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				
	a transfer to the teneral graphic net exceeding nem				
2.1	OD63mm PN6	m	93		
2.2	OD90mm PN6	m	197		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3 .1	OD90mm	No.	1		
J. I		INO.	'		
	Unequal tees				
3.2	OD90 x 63mm	No.	5		
0.2	ODSO A GOTTINI	140.			
	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	End caps				
5.4	OD63mm	No.	5		
	Total Carried to Collection	_			

	e ID. 4.2: ODOKOMIT IN AGAGO DISTRICT		Region:	North	
Item No.	lo.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.2	OD90mm	No.	Rate Only		
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.				
7.2	DN75mm	No.	Rate Only		
7.3	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	14		
	Total Carried to Collection				
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary		I.	<u> </u>	

Region: North

Scheme ID. 4.3: OGET IN KITGUM 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 em	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	11.22		.	Amount
lo.	Description	Unit	Qty.	Rate (UGx.)	(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		
	MISCELLANEOUS METAL WORK				
	Pump Protection System				
1.1	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		
1.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawings.	Item	1		

	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
	Pump Protection System				
4.1	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 s.	Item	1		
	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 = $25 \text{ m}^3/\text{hr.}$, 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 Array 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 - SWAP0022.	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		

	e ID. 4.3: OGET IN KITGUM DISTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description 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 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				
	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		
	Total Carried to Collection				

	e ID. 4.3: OGET IN KITGUM DISTRICT		Region:	North	
BILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1	1	T	T.
Item No.	Description				Amount (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		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	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	Galvanized 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	40		
X6b	Galvanized 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.	1		
	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				

	e ID. 4.3: OGET IN KITGUM DISTRICT	Region:	North	
	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		, , , , , , , , , , , , , , , , , , , 	
Item No.	Description			Amount (UGx.)
110.	Bill No. 1 Collection			(00%)
	2			
	Page 2			
	, and the second			
	Page 3			
	Page 4			
	Page 5			
	Tatal Dill No. 4 Coming to Dill Comme		1	
	Total Bill No. 1 Carried to Bill Summ	ary		

	e ID. 4.3: OGET IN KITGUM DISTRICT		Region:	North	
BILL N	lo2 : TRANSMISSION MAINS	_			
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, grabbing 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 PN16	m	240		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN65mm	No.	4		
	Dully Flow Materia				
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 PN16	No.	6		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	-				
7 7.1	Equal Adapters OD90 female adapter	No.	2		
/.1	ionale adaptei	INU.	_		
	Total Carried to Collection				

	e ID. 4.3: OGET IN KITGUM DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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, PN16	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, PN16	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.	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.	3		
	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	Rate Only		
	Total Carried to Collection				

	e ID. 4.3: OGET IN KITGUM DISTRICT o. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				·
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	15		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	20		
	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	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	12		
	T (0 1 0 1 1				
BILL N	Total Carried to Collection o. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 7				
	Page 8				
	Page 0				
	Page 9				
	Total Bill No. 2 Carried to Bill Summary				

ILL N	e ID. 4.3: OGET IN KITGUM DISTRICT Io. 3 : STORAGE RESERVOIR WORKS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amoun
	DEMOLITION AND SITE CLEARANCE				<u>, , , , , , , , , , , , , , , , , , , </u>
	General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower				
_	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 30m³ Tank.	No.	1		
3	Tanks				
•	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and				
	overflow connection complete with access points, ventilators (2 nr), and				
	internal access ladders, inclusive of anti-rust painting internally, finishes				
	and all necessary accessories to installation complete as specified and				
	detailed in the drawings; to the Engineer's satisfaction. All tank				
	accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	, , ,				
	150-200 micron union/ compression type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
7	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/ compression 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 :-				
			1		
	[OPTIONAL]				

-	e ID. 4.3: OGET IN KITGUM DISTRICT lo. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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.	2		
	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 10				
	Page 11				
	Total Bill No. 3 Carried to Bill Summary		<u> </u>		

	e ID. 4.3: OGET IN KITGUM DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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, grabbing 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	OD75mm PN6	m	300		
2.2	OD90mm PN6	m	200		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	2		
3.2	OD75mm	No.	Rate Only		
3.3	OD63mm	No.	1		
	Hoowiel too				
6.4	Unequal tees OD90 x 75mm	No	Rate Only		
3.5	OD90 x 75mm	No. No.	4		
3.3		INO.	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		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5 .1	OD90mm	No.	Rate Only		
5.2	OD75mm	No.	Rate Only		
5.3	OD63mm	No.	Rate Only		
	Total Carried to Collection	. 10.	<u> </u>	<u> </u>	

	e ID. 4.3: OGET IN KITGUM DISTRICT Io.4: DISTRIBUTION NETWORK		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	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	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 lockable 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.	No.	14		
	Total Carried to Collection			<u> </u>	
	Bill No. 4 Collection				
	Page 12				
	Page 13				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 4.4: LOGOT OPUKT IN LAMWO 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: North

Scheme ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT

BILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
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		
2	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	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		
4.1	MISCELLANEOUS METAL WORK 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 s.	Item	1		
	Total Carried to Collection	<u> </u>	<u> </u>	1	

Region: North

Scheme ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Kegion.		
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 = 25m^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		
	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 Array 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		
МЕ7а	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	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		
	Total Carried to Collection				

	e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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		
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.	Item	Rate Only		
	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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	Total Carried to Collection	<u> </u>	<u> </u>	<u> </u>	

Scheme	e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT		Region:	North	
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			_	Amount
nem Na	Description				/IICx)
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 Galvanized 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	40		
X6b	Galvanized 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.	1		
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				
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary		<u> </u>	<u> </u>	

-	e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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, grabbing tree stumps and disposal of arising materials.	Item	1		
	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 PN16	m	410		
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 16				
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, EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN75mm, PN16	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 PN16	No.	1		
<u> </u>	Total Carried to Collection				

	e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
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				
	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		
	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.	3		
	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>	

Region: North

BILL N	o. 2 : TRANSMISSION MAINS		Kegioii.		
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	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
	sizes				
12.2	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	Rate Only		
	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	Diameter not exceeding DN200mm	No.	Rate Only		
	, and the second				
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	20		
RILL N	Total Carried to Collection o. 2 : TRANSMISSION MAINS				
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary		<u> </u>	l	

Region: North

	Io. 3 : STORAGE RESERVOIR WORKS		Negion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
4	150-200 micron union/ compression 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	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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				

	e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT lo. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	<u>Fences</u>				
7.1	Galvanized 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	1		
	Total Carried to Collection				
	Bill No.3 Collection				
	Page 9				
	Page 10				
	, v				
	Total Bill No. 3 Carried to Bill Summary				

	e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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, grabbing 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	OD75mm PN6	m	166		
2.2	OD90mm PN6	m	300		
	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	OD63mm	No.	1		
	Unequal tees				
3.3	OD90 x 63mm	No.	4		
	DWG UDD5 0				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers		Data Oalu		
4.1	OD75mm	No.	Rate Only Rate Only		
4.2	OD63mm	No.	rate Only		
5	End caps				
5.1	OD63mm	No.	5		
	Total Carried to Collection				

Item Description Unit Oty Rate (UGx.) Amoun		e ID. 4.4: LOGOT OPUKT IN LAMWO DISTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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. 6.1 OD90mm 6.2 OD75mm No. Rate Only Rate Only Rate Only Rate Only Rate Only Rate Only No. No. Rate Only Rat	Item No.		Unit	Qty.	Rate (UGx.)	Amount (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 OD90mm OD75mm 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. 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 lockable 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. No. 24	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 OD90mm 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 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 lockable 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. No. 24		Air Valves				
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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. 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 lockable 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 Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Page 11						
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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 lockable 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 Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11						
distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and lockable 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. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11	8					
complete with connector pipes and lockable 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 Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11						
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 Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11		distribution main, inclusive of PVC compressive ball valve and end cap				
PN10: - DN50mm No. 5 Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11		complete with connector pipes and lockable chamber as detailed on				
8.1 DN50mm No. 5 Other Pipework Ancillaries Marker Posts 9 Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11		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. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11		PN10: -				
Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11	8.1	DN50mm	No.	5		
Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11		Other Pierred A willed to				
9 Marker posts for pipes, gate valves, air valves, washouts. No. 24 Total Carried to Collection Bill No. 4 Collection Page 11						
Total Carried to Collection Bill No. 4 Collection Page 11	_					
Bill No. 4 Collection Page 11	9	Marker posts for pipes, gate valves, air valves, washouts.	No.	24		
Bill No. 4 Collection Page 11						
Page 11		Total Carried to Collection				
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		Bill No. 4 Collection				
		Page 11				
Page 12		·				
Total Bill No. 4 Carried to Bill Summary					<u> </u>	

Region: North

Scheme ID. 4.5: TEKULLU IN LIRA DSTRICT

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	

	e ID. 4.5: TEKULLU IN LIRA DSTRICT		Region:	North	
	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			<u> </u>	
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				
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 surfaces 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				
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	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufacturer's specifications	m ²	Rate Only		
5	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			<u> </u>	

	e ID. 4.5: TEKULLU IN LIRA DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item 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: -				
	Cernent to BS 12, aggregate to BS 602 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				
6.2	200mm thick toe.	m^3	0.3		
6.3	200mm thick base slab.	m^3	2.4		
6.4	350/ 200mm thick retaining 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 chamfering and / or filleting of all exposed concrete corners.	m²	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly sloping formwork to walls including chamfering 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		

i	e ID. 4.5: TEKULLU IN LIRA DSTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North				
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)			
	Reinforcement							
	Deformed High Yield Steel							
0.4	High yield square twisted bars to BS 4449 and of the following sizes		4.0					
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 Spun Iron Pipe Fittings.							
	Flanged Beducero							
9.1	Flanged Reducers DN250 x 150mm	No.	Rate Only					
0.1	5/1266 X 166/////	110.						
	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					
	- 10							
9.4	End Caps DN250mm flanged end cap.	No.	Rate Only					
3. 4	DN250Hitt Hanged end cap.	INO.	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 m long, and of							
	the following sizes:-							
9.5	150 mm ND	No.	Rate Only					
3.0	טאו וווווו ועט	INU.	Auto Only					
	Total Carried to Collection							

	e ID. 4.5: TEKULLU IN LIRA DSTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description 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, stainless steel.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete units	m	8		
	Access Manhole Cover				
	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.	0		
	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	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		
	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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval		1		
	Total Carried to Collection				

	e ID. 4.5: TEKULLU IN LIRA DSTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	Region:	North		
Item	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		
	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	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 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		
	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		
	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		
	Total Carried to Collection				

	e ID. 4.5: TEKULLU IN LIRA DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 gauge 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 Galvanized 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	40		
X6b	Galvanized 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				

Region: North

	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	NOLUI				
	IO. 1. ABSTRACTION AND ELECTROMECHANICAL WORKS	I	1	ı	A			
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	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							

	e ID. 4.5: TEKULLU IN LIRA DSTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
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, grabbing tree stumps and disposal of arising materials.	Item	1.00		
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	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 PIPEWORK - FITTINGS AND VALVES	m	420		
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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 following main pipe sizes				
6.1	DN75mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114	No.	1		
7	Equal Adapters	No	,		
7.1	OD90 female adapter Total Carried to Collection	No.	2	<u> </u>	

	e ID. 4.5: TEKULLU IN LIRA DSTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				(0 0)
	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		
	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				
40.0	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				
11	the following pipe sizes	p 2	Rate Only		
11	Not exceeding DN300mm	m	Nate Only		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Total Carried to Collection				

Region: North

BILL N	Io. 2 : TRANSMISSION MAINS		g							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)					
	Pipe surrounds, of imported granular material, for the following pipe									
	<u>sizes</u>									
12.2	Not exceeding DN200mm	m	Rate Only							
40.0	Pipe surrounds, of mass concrete, for the following pipe sizes		40							
12.3	Not exceeding DN200mm	m	40							
	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.	18							
	Total Carried to Collection									
	Io. 2 : TRANSMISSION MAINS		1							
Item	Description	Unit	Qty.	Rate (UGx.)	Amount					
No.			,	, ,	(UGx.)					
	Bill No. 2 Collection									
	Page 9									
	Page 10									
	Day: 44									
	Page 11									
		1	I	1						
	Total Bill No. 2 Carried to Bill Summary									

Region: North

Description DeMOLITION AND SITE CLEARANCE General Site Clearance Item 1	BILL N	Io. 3 : STORAGE RESERVOIR WORKS				
General Site Clearance General Site Clearance General site clearance including trees, stumps and disposal of arising materials. Reservoir Tower Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ quadrail, 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 30m³ Tank. No. 1 Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0 6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes, and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel. 3.1 Reservoir: 30m³ nominal capacity erected on a 6m high tower 4 150-200 micron union/ compression 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/ compression 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)		Description	Unit	Qty.	Rate (UGx.)	
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 30m³ Tank. No. 1 Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel. 3.1 Reservoir: 30m³ nominal capacity erected on a 6m high tower 1 150-200 micron union/ compression 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: 1 150-200 micron union/ compression 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: 1 150-200 micron union/ compression 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: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	General Site Clearance General site clearance including trees, stumps and disposal of arising	Item	1		
Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel. 3.1 Reservoir: 30m³ nominal capacity erected on a 6m high tower 4 150-200 micron union/ compression 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: 5 150-200 micron union/ compression 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: 6 150-200 micron union/ compression 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: 7 17 18 18 18 18 18 18 18 18 18 18 18 18 18	2	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				
Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel. 3.1 Reservoir: 30m³ nominal capacity erected on a 6m high tower 4 150-200 micron union/ compression 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:- 5 150-200 micron union/ compression 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]	2.1	Height; 6.0m for 30m ³ Tank.	No.	1		
4 150-200 micron union/ compression 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 DN75mm, PN10 No. 1 5 150-200 micron union/ compression 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]	3	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank				
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/ compression 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]	3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
4.1 DN75mm, PN10 No. 1 5 150-200 micron union/ compression 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]	4	non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen				
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]	4.1		No.	1		
	5	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:				
	5.1	1.	No.	1_		

Region: North

BILL N	lo. 3 : STORAGE RESERVOIR WORKS		5		
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 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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.	2		
	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				
	o. 3 : STORAGE RESERVOIR WORKS	1	I	I	
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	<u> </u>		<u>I</u>	

Region: North

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, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	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 PN6	m	135		
2.2	OD75mm PN6	m	140		
2.3	OD90mm PN6	m	122		
	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	OD63mm	No.	2		
	Hanning too				
3.3	Unequal tees OD90 x 75mm	No.	1		
3.4	OD90 x 75111111	No.	1 2		
3.5	OD75 x 63mm	No.	3		
	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 5.4	End caps OD63mm	No.	5		
J. T	Total Carried to Collection	110.		<u> </u>	
BILL N	Io.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Valves				

Schem	e ID. 4.5: TEKULLU IN LIRA DSTRICT		Region:	North					
	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.	Rate Only						
7.2	DN65mm	No.	Rate Only						
7.3	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 lockable 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.	No.	18						
	Total Carried to Collection								
	Bill No. 4 Collection								
	Page 16								
	Page 17								
	Total Bill No. 4 Carried to Bill Summary								

Region: North

Scheme ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT

BILL SUMMARY

	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: North

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
1	General Site Clearance 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				
2.1	BOREHOLE SITING, DRILLING AND TEST PUMPING Inception (Desk Studies), field reconnaissance surveys and siting of suitable borehole site within River Sezibwa Swamp system.	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-N.	Item	1				
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	40				
	Total Carried to Collection						
	TOTAL CALLET						

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	NOTUI	
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, 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		
	Totalia and Order of Control of Samuring to partip samp base	III	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a		·		
	steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with	Item	1		
	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).				
	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	1200mm diameter; height n.e 8m	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:-				
	3				
9	200 mm ND	No.	2		
	Total Carried to Collection				

Scheme	e ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
11	Bellmouths 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				
	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				
13	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		
	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. Internal diameter; 1200x200mm	Item	Rate Only		
16	Stone pitched Channel. 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 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				

Scheme	e ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to				
	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		
	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 Array 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	225		
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. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North				
BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		T					
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)			
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 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 gauge 500 polythene sheet.	m²	220					
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only					
	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. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				
X6a	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of	m	80		
X6b	Galvanized 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		
Х9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
DILLA	Total Carried to Collection				
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1		1	
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				

Schem	e ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North		
BILL N	Io. 2 : TRANSMISSION MAINS					
Item No.	Description	Unit	Rate Only	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, grabbing 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			
	UDDE Dines					
3	HDDE procesure pines to BS 2505, include unions/seeksts, laid in					
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m					
3.1	IOD75mm HDPE PN10	m	400			
J. 1	OD/3/IIII/10/ ET N10	""	400			
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					
5	Bends					
	Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN					
- A	10, and of the following sizes	Na	4			
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					
6.3	DN65mm PN10	No.	1			
	T (0 1 1 0 1 1					
Total Carried to Collection						

ttem No. 2: TRANSMISSION MAINS PM16 HDPE Compression fitting to DIN 8074/BS 5114		e ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
No. Description Unit Qty. Rate (UGx.) (UGx.) 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, flanges to ISO 7241, 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. 8.3 DN65mm No. 1 9 Washouts Washout as specified in the drawings, complete with plastic, compression pipe fittings; i.ee, 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 bott, include down pipe, complete as specified and to the following depths 10.2 Depth not exceeding 1.5m Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12	BILL N	o. 2 : TRANSMISSION MAINS	-			
7.1 OD90 female adapter 7.1 OD90 female adapter 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. 8.3 DN65mm No. 1 9. Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; liee, 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 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. 3 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12		Description	Unit	Qty.	Rate (UGx.)	
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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 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 Depth not exceeding 1.5m No. 3 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12		• • • • • • • • • • • • • • • • • • • •				
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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. 3 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11 Not exceeding DN300mm m 12	9.1	DNOSHIII	NO.	2		
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down pipe, complete as specified and to the following depths Depth not exceeding 1.5m No. 3 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12		Valve surface box for DN100 - DN300 valves, with lockable cover				
10.2 Depth not exceeding 1.5m Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm No. 3 Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 11 Not exceeding DN300mm n 12		securely attached to main body of surface box by chain or bolt, include				
Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12		down pipe, complete as specified and to the following depths				
Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12	10.2	Depth not exceeding 1.5m	No.	3		
Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12						
Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm m 12						
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the following pipe sizes 11 Not exceeding DN300mm m 12		Breaking up, temporary and permanent reinstatement of gravel roads for				
11 Not exceeding DN300mm m 12						
	11	- · · ·	m	12		
I VIAI VAITIVA IV VVIICULIVII		Total Carried to Collection				

Region: North

	lo. 2 : TRANSMISSION MAINS		Region:	NOrth				
Item					Amount			
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)			
12	<u>Surrounds</u>							
	Pipe surrounds, of selected excavated granular material, for the							
	following pipe sizes							
12.1	Not exceeding DN200mm	m	Rate Only					
	Pipe surrounds, of imported granular material, for the following pipe							
	<u>sizes</u>							
12.2	Not exceeding DN200mm	m	90					
	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.	No.	20					
	Total Carried to Collection							
BILL N	o. 2 : TRANSMISSION MAINS							
Item	Description	11	04.	Data (IICs)	Amount			
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)			
	Bill No. 2 Collection							
	Page 8							
	_							
	Page 9							
	Page 10							
	Ĭ							
	Total Bill No. 2 Carried to Bill Summary							
	Total Bill No. 2 Gained to Bill Sulfilliary							

Region: North

BILL No. 3: STORAGE RESERVOIR WORKS					
		Hei4	04.	Doto (UCv.)	America
item	Description DEMOLITION AND SITE CLEARANCE	Unit	Qty.	Rate (UGx.)	Amount
	General Site Clearance		_		
1	General site clearance including trees, stumps and disposal of arising	Item	1		
'	materials.				
2	Reservoir Tower				
	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 30m ³ Tank.	No.	1		
3	Tanks				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and				
	overflow connection complete with access points, ventilators (2 nr), and				
	internal access ladders, inclusive of anti-rust painting internally, finishes				
	and all necessary accessories to installation complete as specified and				
	detailed in the drawings; to the Engineer's satisfaction. All tank				
	accessories shall be of hot dipped galvanised steel.				
	accessories strail be of flot dipped garvarilsed steet.				
	2				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	150-200 micron union/ compression 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		
7.1	טוזוווון, ו וייוט	INO.	!		
	150 200 micron union/ compression type clear uDVC_V_Disc Filter_pen				
	150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe				
5					
	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. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
BILL N	o. 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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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	1		
	Total Carried to Collection				
BILL N	o. 3 : STORAGE RESERVOIR WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Siii 115. 5 Concoulon				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

Scheme ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT

	e ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
BILL N	o.4 : DISTRIBUTION NETWORK			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, grabbing 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	400		
2.2	OD75mm PN10	m	Rate Only		
2.2	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 6 Depth not exceeding 1.5m	m	280		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	1		
0.1	SS (()	10.	'		
	Unequal tees				
3.2	OD110 x 90mm	No.	2		
3.3	OD110 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	i idalio i ipe i illiliga				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
			,		
5	End caps				
5.1	OD90mm	No.	Rate Only		
	Total Carried to Collection				

Scheme ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT

Scheme	e ID. 4.6: BWAMULAMIRA IN KAYUNGA DISTRICT		Region:	North	
BILL N	o.4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	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.	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	20		
	Total Carried to Collection				
<u> </u>	Total Carried to Collection			 	
	Bill No. 4 Collection				
	Page 13				
	raye is				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 4.7: OPORE IN OTUKE DSTRICT

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	

	e ID. 4.7: OPORE IN OTUKE DSTRICT		Region:	North	
Item No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1101	General Site Clearance				(OOAI)
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 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 surfaces 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	345		
	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	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufacturer'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.	m²	840		
	Total Carried to Collection				

Region: North

	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.		
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, 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 retaining 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 chamfering 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 sloping formwork to walls including	m^2	140		
-	chamfering and / or filleting of all exposed concrete corners.	111			
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m^2	11		
	Total Carried to Collection				

	e ID. 4.7: OPORE IN OTUKE DSTRICT Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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 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 Spun 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 m long, and of				
0.5	the following sizes:-	١	Data Oak		
9.5	150 mm ND	No.	Rate Only		
	Total Carried to Collection				

Region: North

JILL I	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9.6	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: - 300mm wide x 1000mm high, stainless steel.	No.	1		, ,
10.1	MISCELLANEOUS METAL WORK Ladders External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as 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.	0		
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		
ME1	ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 5.5kW Submersible Pump Set with 11.0W Pumping Inverter with Data Module, rated flow Q = 22 m³/hr., rated head H = 75 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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval		1		

Region: North

	IO.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	North	
nem	Description	Unit	Qty.	Rate (UGx.)	Amount
ME4	PV Disconnect 1000-40-2	No.	1	, ,	/IIPV
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	175		
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 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		
	Total Carried to Collection				

Description Description Unit Qty. Rate (UGx.) Am (U 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. 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 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet. X4 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. Fences Galvanized 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. x66 Galvanized 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. x6 Galvanized 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. x6 Galvanized 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. x7 x6 Galvanized 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. x8 Training of Operator's staff x8 Training of Operator's staff Training of Operator's staff Training Operator's staff Training Operator's staff Training Operator's staff Training Operator's staff x8 Training Operator's staff x8 Training Operator's staff x8 Training Operator's staff x8 X8 Training Operator's staff x8 X8 Training Operator's staff x8 X8 X8 X8 X8 X8 X8 X8		e ID. 4.7: OPORE IN OTUKE DSTRICT Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
MISCELLANEOUS WORKS Pump Protection System X1 Vertical pipe pump stillling 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. 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 gauge 500 polythene sheet. X4 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. Fences Galvanized 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. X6b Galvanized 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. X7 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 Sum 1	Item		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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. 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 gauge 500 polythene sheet. X4 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. Fences Galvanized 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. X6b Galvanized 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 X7 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 Sum 1		MISCELLANEOUS WORKS				. ,
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	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	No.	1		
Taining of Operator's staff 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet. Machine Solar Array laid onto a ga		Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the				
Solar Array laid onto a gauge 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 No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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 X7 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 Sum 1	X2	Straight or curved to a radius exceeding 12 m	m	70		
Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences Galvanized 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. X6b Galvanized 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 X7 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 Sum 1	X3		m²	220		
Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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 X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff X8 Train Operator's staff in basic operation and maintenance procedures of all Sum 1	X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
Salvanized 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. X6b Galvanized 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. Gates X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff X8 Train Operator's staff in basic operation and maintenance procedures of all Sum 1	X5	Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
barbed wire on top; height 2-2.5m at the Pumping Station Site. Gates X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff X8 Train Operator's staff in basic operation and maintenance procedures of all Sum 1	X6a	Galvanized 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	m	40		
X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Training of Operator's staff X8 Train Operator's staff in basic operation and maintenance procedures of all Sum 1	X6b	- · · · · · · · · · · · · · · · · · · ·	m	120		
X8 Train Operator's staff in basic operation and maintenance procedures of all Sum 1	X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the	No.	2		
plant and equipment supplied as per the technical specifications and to the Project Manager's approval	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	Sum	1		
Operation and Maintenance Manuals Yes Provide Operation and Maintenance Manuals as specified and to the Project Sum Manager's approval	X9	Provide Operation and Maintenance Manuals as specified and to the Project	Sum	1		
Total Carried to Collection		Total Carried to Collection				

	e ID. 4.7: OPORE IN OTUKE DSTRICT		Region:	North	
Item No.	lo. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description				Amount (UGx.)
XXX	Stone Pitching. 250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m ²	125		(C C C C C C C C C C C C C C C C C C C
	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>	<u> </u>	

Region: North

BILL N	Io. 2 : TRANSMISSION MAINS		Region.		
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, grabbing 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 PN16	m	1,060		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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		
7	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD90 female adapter	No.	2		
	Total Carried to Collection				

	e ID. 4.7: OPORE IN OTUKE DSTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.1 9	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. 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.	1		(OOA.)
9.1	PN10 including valve surface box to detail. DN65mm PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers	No.	1		
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.	2		
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				

Region: North

	lo. 2 : TRANSMISSION MAINS		Region.		
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		
12.2	Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm	m	Rate Only		
12.3	Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm	m	60		
	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	Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts	No.	Rate Only		
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	20		
	Total Carried to Collection				
	o. 2 : TRANSMISSION MAINS	1	I		A · ·
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 9				
	Page 10				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary				

Region: North

Item	Description	He!4	04	Dete (UO:	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising	Item	1		
'	materials.				
2	Reservoir Tower				
2	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.				
	Ionowing height and reservior capacities.				
2.1	Height; 6.0m for 30m ³ Tank.	No.	1		
3	<u>Tanks</u>				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and				
	overflow connection complete with access points, ventilators (2 nr), and				
	internal access ladders, inclusive of anti-rust painting internally, finishes				
	and all necessary accessories to installation complete as specified and				
	detailed in the drawings; to the Engineer's satisfaction. All tank				
	accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	150-200 micron union/ compression type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following pipe				
7	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/ compression type clear uPVC Y- Disc Filter, non				
•	corrosive, complete with all fittings, installation on the following pipe				
	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		
U.L	Total Carried to Collection	110.	'	1	

Region: North

BILL N	o. 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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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				
	following grades:				
8.1	Grade C15	m^3	2		
	Total Carried to Collection				
	Bill No. 3 Collection				
	Page 112				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary	1			

	e ID. 4.7: OPORE IN OTUKE DSTRICT Io.4: DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				Ì
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing 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	685		
2.2	OD75mm PN6	m	298		
2.3	OD90mm PN6	m	140		
	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.	6		
0.0					
2.00	Bends	NI-	_		
3.90	OD75 x 63	No.	6		
	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	5		
0.1		No.	ا		
İ	Total Carried to Collection				

	e ID. 4.7: OPORE IN OTUKE DSTRICT Io.4: DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.2	OD90mm	No.	1		
6.4	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.	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 lockable 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.	No.	35		
	Total Carried to Collection	<u> </u>	<u> </u>		
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary			<u> </u>	

Scheme ID. 5.1: BORO EAST CENTRAL IN PAKWACH DSTRICT Region: North

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	

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, 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 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				
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 top/vegetable soil.	m ³	10				
	Total Carried to Collection	•		i			

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with	m^2	40		
	excavated topsoil and preparation of surfaces.				
	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	2200mm 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	2200mm 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. 1200mm diameter; height n.e. 8m	ltem	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>	

Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	•		٠.,.	1 11110 (0 0 2111)	(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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
	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		

	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem	Description ELECTRO-MECHANICAL WORKS	Unit	Qtv.	Rate (UGx.)	Amount
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 Array 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	10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	225		
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		

	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
•	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System 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 Solar Array laid onto a gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	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				

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		rtegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Fences</u>				
X6a	Galvanized 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	Galvanized 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		
	Outsetfee and Maintanana Managar				
\/O	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				
	Dana R				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary			<u> </u>	

	lo. 2 : TRANSMISSION MAINS		Region:	North			
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, grabbing 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 OD75mm HDPE PN10	m	500				
	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings						
5	Bends Galvanized iron threaded socket 45° bends, to BS 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	OD90 female adapter	No.	2				
Total Carried to Collection							

	o. 2 : TRANSMISSION MAINS		Region:	1101111	
Item				_ , ,,,,	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(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.				
8.3	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		
	DIDENORY MANUAL EC AND DIDENORY ANGUL ADJECT				
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
10.1	Depth not exceeding 1.5m	No.	2		
	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				
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	24		
12	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Total Carried to Collection				

-	io. 2 : TRANSMISSION MAINS		Region:	NOTH			
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
	Pipe surrounds, of imported granular material, for the following pipe				,		
40.0	sizes		50				
12.2	Not exceeding DN200mm	m	50				
	Pipe surrounds, of mass concrete, for the following pipe sizes						
12.3	Not exceeding DN200mm	m	30				
	Consusts Stocks and Thrust Blocks						
	Concrete Stools and Thrust Blocks						
	Thrust Blocks						
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume						
13	0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm	No.	Rate Only				
13	Diameter not exceeding DN200mm	INO.	Nate Only				
	Other Pipework Ancillaries						
	Marker Posts						
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	24				
	Total Carried to Collection						
	Dill No. 2 Calleadian						
	Bill No. 2 Collection						
	Page 8						
	Page 9						
	Page 10						
	Total Bill No. 2 Carried to Bill Summary	<u> </u>					
L	i otal bili No. 2 Carried to bili Summary						

ce, stumps and disposal of arising oir support complete, include ladders, plates, braces, walkway/ outs, washers, etc, painting and etailed in the drawings, of the	Unit Item	Qty. 1	Rate (UGx.)	/HCw)
oir support complete, include ladders, plates, braces, walkway/	Item	1		
oir support complete, include ladders, plates, braces, walkway/ luts, washers, etc, painting and	Item	1		
oir support complete, include ladders, plates, braces, walkway/ luts, washers, etc, painting and	item	l		
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ladders, plates, braces, walkway/ outs, washers, etc, painting and				
ladders, plates, braces, walkway/ outs, washers, etc, painting and				
ladders, plates, braces, walkway/ outs, washers, etc, painting and				
etailed in the drawings , of the				
ies.				
	No.	1		
thick mild steel plate horizontal				
eer's satisfaction. All tank				
Ivanised steel.				
cted on a 6m high tower	No.	1		
vne clear uPVC Y- Screen Filter				
, , , , , , , , , , , , , , , , , , , ,				
	No.	1		
vne clear uPVC V- Disc Filter non				
a pair or repracement disk				
	No	1		
	INO.	'		
	ies. In thick mild steel plate horizontal access man way, water level in inlet, outlet, washout and access points, ventilators (2 nr), and anti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank alvanised steel. In thick mild steel plate horizontal access man way, water level and excess points, ventilators (2 nr), and inti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank eer's satisfaction. All tank eer's satisfaction and high tower expected on a 6m high tow	No. In thick mild steel plate horizontal access man way, water level in inlet, outlet, washout and access points, ventilators (2 nr), and anti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank anised steel. In thick mild steel plate horizontal access man way, water level in inlet, outlet, washout and access points, ventilators (2 nr), and anti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank anised steel. In thick mild steel plate horizontal access man way, water level in the plate and internal seems points. No. In thick mild steel plate horizontal access man way, water level in the plate and internal seems points. All tank and internal steel in the plate and internal seems points and internal seems points. No. In thick mild steel plate horizontal access man way, water level in the plate and internal seems points. All tank and internal seems points and internal seems points and internal seems points. No. In thick mild steel plate horizontal access man way, water level in the plate in the plate and internal seems points. All tank and internal seems points and internal seems points and internal seems points and internal seems points. No. In thick mild steel plate horizontal access man way, water level in the plate in the plate and internal seems points. No.	nthick mild steel plate horizontal access man way, water level ninlet, outlet, washout and anti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank anised steel. Sected on a 6m high tower No. 1 Type clear uPVC Y- Screen Filter, us, installation on the following GI ally of a pair of replacement screen No. 1 Type clear uPVC Y- Disc Filter, non estallation on the following GI pipe a pair of replacement disk No. 1	No. 1 In thick mild steel plate horizontal access man way, water level in inlet, outlet, washout and anti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank alvanised steel. In thick mild steel plate horizontal access man way, water level in inlet, outlet, washout and inti-rust painting internally, finishes allation complete as specified and eer's satisfaction. All tank alvanised steel. In thick mild steel plate horizontal access man way, water level in inlet, outlet, outlet, and indicates a specified and enti-rust painting internally, finishes allation on the following GI and eer's satisfaction. All tank alvanised steel. No. 1 In thick mild steel plate horizontal access man way, water level in inlet, outlet, ou

Region: North

Scheme ID. 5.1: BORO EAST CENTRAL IN PAKWACH DSTRICT

	lo. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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 8.1	Designed this concrete, to DO 0020, with ordinary Fortiand centeric to DC 12 corrects to DC 002 for 10mm corrects sizes and the 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. 5.1: BORO EAST CENTRAL IN PAKWACH DSTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
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, grabbing tree stumps and disposal of	Itom			
	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 PN6	m	378		
2.3	OD90mm PN6	m	280		
	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	OD63mm	No.	1		
	Unequal tees				
3.3	OD90 x 63mm	No.	3		
	DN44 UDDE 0 544				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers	,,	Data Ori		
4.1 4.2	OD90mm OD63mm	No. No.	Rate Only Rate Only		
4.2		INO.	Nate Only		
5	End caps				
5.1	OD63mm	No.	5		
Total Carried to Collection					

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.1	OD90mm	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.				
7.1	DN75mm	No.	1		
7.2	DN50mm	No.	1		
8	Farm Gate Connections				
Ū	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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	5		
0.1	DNSomm	INO.			
	Other Pipework Ancillaries				
•	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	16		
	Total Carried to Collection			1	
	Bill No. 4 Collection				
	Page 13				
	·				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary	<u> </u>			

Region: North

Scheme ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT

BILL SUMMARY

Bill No.	UMMARY 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. 5.2: PANYUA IN MADI OKOLI O DSTRICT

	e ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT		Region:	North	
	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
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				
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 surfaces 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				
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	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufacturer's specifications	m^2	Rate Only		
5	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		<u> </u>		

Scheme ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT

	e ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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	m ³	1.1		
0.1	the following thickness	m	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 retaining 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 chamfering 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 sloping formwork to walls including chamfering and / or filleting of all exposed concrete corners.	m²	140		
7.0	Finishing of top surfaces	2	11		
7.3	Steel trowel finishing of top surfaces.	m ²	11		
	Total Carried to Collection				

Region: North

Scheme ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT

	o.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						
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 Spun 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 m long, and of the following sizes:-						
9.5	150 mm ND	No.	Rate Only				
	Total Carried to Collection		<u> </u>	<u> </u>			
Total Carried to Collection							

Scheme ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT

	e ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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, Stainless steel.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as 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		
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.	0		
	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)				
	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m³/hr., rated head H = 70m 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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval		1		
	Total Carried to Collection				

Region: North

-	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	itorui	
	Description	Unit	Qty.	Rate (UGx.)	Amount
	PV Disconnect 1000-40-2	No.	1		(IICA)
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	175		
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 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		
	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		
	Total Carried to Collection				

Item No. Description Unit City. Rate (UGx.) Amount (UGx.)		e ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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. Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: - Vertical pipe pump stilling to a radius exceeding 12 m m 70	Item		Unit	Qty.	Rate (UGx.)	
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. Vertical Stabs/003, including 1.5x1.5x0.3m support base.		MISCELLANEOUS WORKS				(,
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 Solar Array laid onto a gauge 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 No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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 X7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the 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 Operation and Maintenance Manuals X9 Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval		Pump Protection System				
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 gauge 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 No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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. Gates X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	X1	floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a	No.	1		
Straight or curved to a radius exceeding 12 m m 70 X3 T5mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 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 No.OIS/NUC/PH/001. Fences Galvanized 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. X6b Galvanized 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. Gates X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval		Kerbs				
Tomm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 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 No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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. Galvanized 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 X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval X9 Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval						
Solar Array laid onto a gauge 500 polythene sheet. X4 450mm diameter reinforced concrete pipe/ culvert	X2	Straight or curved to a radius exceeding 12 m	m	70		
Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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 X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	X3		m²	220		
Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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 X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Deration and Maintenance Manuals X9 Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences X6a Galvanized 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. X6b Galvanized 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 X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Deration and Maintenance Manuals X9 Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval		Pump House				
Galvanized 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. X6b Galvanized 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 X7 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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	X5	Construct a 12.0m superficial area Pump House to detail as per Drawing	Sum	1		
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 Galvanized 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. Gates X7 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 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		Fences				
barbed wire on top; height 2-2.5m at the Pumping Station Site. Gates X7 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 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	X6a	barbed wire on top; height 2-2.5m at the Intake Site, including special erection	m	40		
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 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	X6b		m	120		
fence. 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 Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval		<u>Gates</u>				
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 Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	X7	l.	No.	1		
plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Sum 1 Manager's approval		Training of Operator's staff				
X9 Provide Operation and Maintenance Manuals as specified and to the Project Sum 1 Manager's approval	X8	plant and equipment supplied as per the technical specifications and to the	Sum	1		
X9 Provide Operation and Maintenance Manuals as specified and to the Project Sum 1 Manager's approval		Operation and Maintenance Manuals				
Total Carried to Collection	X9	Provide Operation and Maintenance Manuals as specified and to the Project	Sum	1		
		Total Carried to Collection	<u> </u>	<u> </u>	1	

Region: North

	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	 -gioii.	
Item No.	Description		Amount (UGx.)
	Bill No. 1 Collection		
	Page 2		
	Page 3		
	Page 4		
	Page 5		
	Page 6		
	Page 7		
	Tatal Dill No. 4 Comite Lite Dill C		
l	Total Bill No. 1 Carried to Bill Summary		

Region: North

	lo. 2 : TRANSMISSION MAINS		Region.		
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, grabbing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				
2	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	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN16	m	340		
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 16 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, 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 PN16	No.	1		
	Total Carried to Collection				

i	e ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
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				
	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.	2		
10.1	Deptit 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.	2		
	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				

Region: North

BILL N	o. 2 : TRANSMISSION MAINS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
40.4	following pipe sizes		Data Oak		
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
	Sizes				
12.2	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	30		
13	Concrete Stools and Thrust Blocks				
10	<u> </u>				
	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.	15		
	Total Carried to Collection				
	Total Carried to Collection				
	Bill No. 2 Collection				
	Page 9				
	Page 10				
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	Page 11				
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	Total Bill No. 1.2 Carried to Bill Summary				

Region: North

	Io. 3 : STORAGE RESERVOIR WORKS		Region.	noru:	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		(C S III)
2	Reservoir Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
4	150-200 micron union/ compression 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	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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: North

BILL N	lo. 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 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 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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				
8.1	following grades:	3	2		
0.1	Grade C15	m ³	2		
	Total Carried to Collection				
	o. 3 : STORAGE RESERVOIR WORKS	1	1	1	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
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	Page 12				
	Page 13				
	Total Bill No. 2 Carried to Bill Summary				

Region: North

ltem			٠.	D (///2 .	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 route, including felling trees, grabbing 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	867		
2.2	OD75mm PN6	m	270		
2.3	OD90mm PN6	m	125		
	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.	2		
	Unequal tees				
3.4	OD90 x 75mm	No.	1		
3.5	OD75 x 63mm	No.	5		
	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		
BILL	Total Carried to Collection No.4 : DISTRIBUTION NETWORK				
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				(001.)
-	Air Valves				

Scheme	e ID. 5.2: PANYUA IN MADI OKOLLO DSTRICT	_	Region:	North
	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' PN6	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	DN75mm	No.	1	
7.2	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 lockable 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			
	Marker posts for pipes, gate valves, air valves, washouts.	No.	36	
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	Total Carried to Collection			
	Bill No. 4 Collection			
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	Total Bill No. 4 Carried to Bill Summary			(

Region: North

Scheme ID. 5.3: ABAA IN MARACHA DSTRICT

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	

	e ID. 5.3: ABAA IN MARACHA DSTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	NOTTN	
Item 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		
0.4	Excavation to form trapezoidal channel in material other than topsoil. rock or	3	450		
2.4 2.5	Marshy soils Soft / decomposed rock soils	m ³	150 6		
2.5	Soft / decomposed rock softs	m ³	Ö		
	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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		

Region: North

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 - 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	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		
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		

ILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS WORKS				, ,
V4	Pump Protection System	Na	4		
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				
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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	<u>Fences</u>				
X6a	Galvanized 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	40		
X6b	Galvanized 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		
V7	Gates Makel field make to DC 2470 width 4 Fire circle leaf and hairblite makel the	Na	4		
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	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		

	e ID. 5.3: ABAA IN MARACHA DSTRICT No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:		
em lo.	Description				Amount (UGx.)
XX	Stone Pitching. 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			<u> </u>	

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, grabbing 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 PN16	m	240		
	PIPEWORK - FITTINGS AND VALVES				
5 5.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, 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 PN16 HDPE Compression fitting to DIN 8074/BS 5114	No.	1		
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		

	e ID. 5.3: ABAA IN MARACHA DSTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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.				
9.1	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.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11	Not exceeding DN200mm	m	24		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
40 :	following pipe sizes		Data O 2		
12.1	Not exceeding DN200mm	m	Rate Only		

Region: North

	No. 2 : TRANSMISSION MAINS		Region.	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	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	30		
	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	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	15		
17	Total Carried to Collection	140.	10	<u>. </u>	
	Bill No. 2 Collection				
	Page 6				
	r age o				
	Page 7				
	Page 8				
	1 290 0				
	Total Bill No. 2 Carried to Bill Summary				

Region: North

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	DEMOLITION AND SITE CLEARANCE				(UGX.)
	General Site Clearance				
	General site clearance including trees, stumps and disposal of arising	Item	1		
1	materials.	ItCIII	Ī		
	materials.				
2	Reservoir Tower				
_	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 roccivion adpublics.				
2.1	Height; 6.0m for 30m ³ Tank.	No.	1		
۷. ۱	Inteligrat, o.om for Som Tank.	110.			
3	Tanks				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and				
	overflow connection complete with access points, ventilators (2 nr), and				
	internal access ladders, inclusive of anti-rust painting internally, finishes				
	and all necessary accessories to installation complete as specified and				
	detailed in the drawings; to the Engineer's satisfaction. All tank				
	accessories shall be of hot dipped galvanised steel.				
	•				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	150-200 micron union/ compression 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/ compression 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: North

-	lo. 3 : STORAGE RESERVOIR WORKS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	<u>Landscaping and Walkways</u> Turfing for lawns inside fenced off compound; including filling with	m ²	150		(= - /
0.1	excavated topsoil and preparation of surfaces.	m ⁻	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 200mm thick murram fill.	No.	Rate Only		
7	Fences		60		
7.1	Galvanized 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		1		
	Bill No. 12.3 Collection				
	Page 10				
	Page 11				
	Total Bill No.3 Carried to Bill Summary				

	o.4 : DISTRIBUTION NETWORK	ı	1	 	
ltem 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, grabbing 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 PN6	m	200		
2.2	OD90mm PN6	m	236		
	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				
3.2	OD75 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4 4.2	OD90mm	No.	Rate Only		
	OD75mm	No.	Rate Only		
T.J	00/3/1111	INU.	. tato only		
5	End caps				
5.1	OD50mm	No.	5		

Region: North

	6 ID. 3.3. ABAA IN MARACHA DOTRICT IO.4 : DISTRIBUTION NETWORK		Region:	North	
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
6	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.				
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.				
7.4	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 lockable 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.	No.	42		
	Total Carried to Collection			<u> </u>	
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary			<u> </u>	

Region: North

Scheme ID. 5.4: PAUBA IN MOYO DSTRICT

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: PAUBA IN MOYO DSTRICT Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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 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	4		
2.5	Soft / decomposed rock soils	m ³	1		
	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: -	2	40		
3	Selected excavated material including topping with a 200mm thick layer of top/vegetable soil.	m ³	10		
	Total Carried to Collection				
	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	1			
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				

Scheme ID. 5.4: PAUBA IN MOYO DSTRICT Region: North

Scheme ID. 5.4. PAUDA IN MOTO DSTRICT		Region:	NOTUI	
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 2200mm 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 2200mm 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).		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 1200mm diameter; height n.e 8m		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		
Total Carried to Collection				

	e ID. 5.4: PAUBA IN MOYO DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		,
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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				

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		g		
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 11.0kW Pumping Inverter with Data Module, rated flow $Q = 20 \text{ m}^3/\text{hr.}$, rated head $H = 70 \text{m}$ 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 Array 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		
МЕ7а	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	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		
	Total Carried to Collection				

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Kegioii.	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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		
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		
	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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
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: North

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6a	Fences Galvanized 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	Galvanized 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				
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		_		A
leiii Na	Description				AIIIOUIII (LICy)
	Bill No. 1 Collection Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				

Region: North

BILL	Io. 2 : TRANSMISSION MAINS		Region.		
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, grabbing tree stumps and disposal of arising materials.	Item	1.00		
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 OD75mm HDPE PN16	m	330		
5	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes				
5.1 6	DN65mm Bulk Flow Meters	No.	4		
6.1	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		
7 7.1	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters OD90 female adapter	No.	2		
	Total Carried to Collection				

	e ID. 5.4: PAUBA IN MOYO DSTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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.				
9.3	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.	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.	3		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
10 1	following pipe sizes		Rate Only		
12.1	Not exceeding DN200mm	m	rate Only		
	Total Carried to Collection				

Region: North

	o. 2 : TRANSMISSION MAINS		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	45		
	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	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	11		
	Total Carried to Collection		_		
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

Region: North

BILL N	o. 3 : STORAGE RESERVOIR WORKS		Kegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
4	150-200 micron union/ compression 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	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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: North

BILL No. 3 : STORAGE RESERVOIR WORKS						
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only			
7 7.1	Fences Galvanized 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					
	Dill No. 2 Collection					
	Bill No. 3 Collection					
	Page 9					
	Page 10					
	• • • • • • • • • • • • • • • • • • • •					
	Total Bill No. 3 Carried to Bill Summary					

-	e ID. 5.4: PAUBA IN MOYO DSTRICT o.4 : DISTRIBUTION NETWORK		Region:	North	
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, grabbing 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	165		
2.2	OD75mm PN10	m	200		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
	Equal tees				
3.1	OD75mm	No.	1		
3.2	OD63mm	No.	1		
	Unequal tees				
3.3	OD75 x 63mm	No.	2		
	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				
5.1	OD50mm	No.	5		
	Total Carried to Collection	<u> </u>	<u> </u>	<u> </u>	

	e ID. 5.4: PAUBA IN MOYO DSTRICT lo.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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 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 lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	16		
	Total Carried to Collection		<u> </u>		
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill Summary	-	-		

Region: North

Scheme ID. 5.5: CEKE IN NWOYA DSTRICT

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	

No. Description Unit Qty. Rate (UGx.)		e ID. 5.5: CEKE IN NWOYA DSTRICT		Region:	North	
No. Description Unit Qty. Rate (UGx.)	BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	Г		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. 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 surfaces to receive hardcore fill. 2.2 Ditto but for the Intake Structure m³ 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. 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. 3.2 Imported murram. m³ 10 Single layer of geotextile laid to manufacturer's specifications m² Rate Only Landscaping 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.	Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 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 surfaces to receive hardcore fill. Ditto but for the Intake Structure 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. 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. 3.2 Imported murram. 4 Single layer of geotextile laid to manufacturer's specifications 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.		General Site Clearance				
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 surfaces to receive hardcore fill. 2.2 Ditto but for the Intake Structure 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. 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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator. 3.2 Imported murram. M³ 10 Washingly layer of geotextile laid to manufacturer's specifications Landscaping 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.	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	Item	1		
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 surfaces to receive hardcore fill. 2.2 Ditto but for the Intake Structure 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. 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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator. 3.2 Imported murram. M in 10 Landscaping 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.		Earthworks				
2.2 Ditto but for the Intake Structure 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. 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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator. 3.2 Imported murram. May 12 May 12 May 14 Single layer of geotextile laid to manufacturer's specifications May 10 Landscaping 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.	2.1	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	m ³	57		
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: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator. Imported murram. m³ 10 Single layer of geotextile laid to manufacturer's specifications m² Rate Only Landscaping 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.	2.2		m ³	34		
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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator. Imported murram. Imported murram. Single layer of geotextile laid to manufacturer's specifications Landscaping 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. m³ 10 Rate Only m² 840	2.3	including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes	m ³	175		
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 fill, size 75 to 300mm hand packed or compacted by the arm of an excavator. Imported murram. Imported murram. Single layer of geotextile laid to manufacturer's specifications Landscaping 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. m³ 10 Rate Only m² 840		Filling				
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. 3.2 Imported murram. Mm3 10 Single layer of geotextile laid to manufacturer's specifications Landscaping 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. m³ 10 Rate Only m² 840						
the arm of an excavator. 3.2 Imported murram. May 10 Single layer of geotextile laid to manufacturer's specifications Landscaping 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. Rate Only 840						
Single layer of geotextile laid to manufacturer's specifications Landscaping 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. Rate Only m² 840	3.1		m ³	12		
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.	3.2	Imported murram.	m ³	10		
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.	4	Single layer of geotextile laid to manufacturer's specifications	m ²	Rate Only		
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.		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	m ²	840		
Total Carried to Collection		Total Carried to Collection			<u> </u>	

Scheme ID. 5.5: CEKE IN NWOYA DSTRICT

	e ID. 5.5: CEKE IN NWOYA DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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, 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 retaining 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 chamfering 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 sloping formwork to walls including chamfering 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		

Total Carried to Collection

Region: North

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 Spun 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 m long, and of				
	the following sizes:-				
9.5	150 mm ND	No.	Rate Only		
	Total Carried to Collection			<u> </u>	

Region: North

BILL N	BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
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, stainless steel.	No.	1					
	MISCELLANEOUS METAL WORK Ladders							
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as 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.	0					
	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					
	Module, rated flow Q = $20 \text{ m}^3/\text{hr.}$, rated head H = 70m total head; set to not more than 5m 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 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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval	Sum	1					
	Total Carried to Collection		1	<u> </u>				
	2000 0000000000000000000000000000000000							

Scheme ID. 5.5: CEKE IN NWOYA DSTRICT

	e ID. 5.5: CEKE IN NWOYA DSTRICT Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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 - 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 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		

Total Carried to Collection

Region: North

Scheme ID. 5.5: CEKE IN NWOYA DSTRICT

BILL N	Io.1: ABSTRACTION AND ELECTROMECHANICAL WORKS		• 3		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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 gauge 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 Galvanized 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	40		
X6b	Galvanized 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		
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		

Total Carried to Collection

	e ID. 5.5: CEKE IN NWOYA DSTRICT	Region:	North	
	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			
Item No.	Description			Amount (UGx.)
140.				(OOX.)
	Bill No. 1 Collection			
	Page 2			
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	Total Bill No. 1 Carried to Bill Summary			

Region: North

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
110.	DEMOLITION AND SITE CLEARANCE				(OOX.)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
•	route, including felling trees, grabbing tree stumps and disposal of	1.0			
	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 PN16	m	300		
3.1		m	300		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
•	Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN65mm	No.	4		
0.1	STOOMIN	110.			
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 7.1	Equal Adapters OD90 female adapter	No.	2		
1.1	ODBO TETHATE ANAPIET	INO.	2		
	Total Carried to Collection	<u> </u>	<u> </u>		

	e ID. 5.5: CEKE IN NWOYA DSTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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	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				
	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	24		
	Total Carried to Collection				

	e ID. 5.5: CEKE IN NWOYA DSTRICT Io. 2 : TRANSMISSION MAINS		Region:	North	
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		
12.2	Pipe surrounds, of imported granular material, for the following pipe sizes Not exceeding DN200mm	m	Rate Only		
12.2	Pipe surrounds, of mass concrete, for the following pipe sizes		rate only		
12.3	Not exceeding DN200mm	m	24		
	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		
	Other Pipework Ancillaries Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	14		
	Total Carried to Collection				
	Bill No. 2 Collection				
	Page 9				
	Page 10				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary	*	•		

	e ID. 5.5: CEKE IN NWOYA DSTRICT Io. 14.3 : STORAGE RESERVOIR WORKS		Region:	North	
Item No.	Description Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				•
	General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower				
	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 30m ³ Tank.	No.	1		
3	<u>Tanks</u>				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and overflow				
	connection complete with access points, ventilators (2 nr), and internal				
	access ladders, inclusive of anti-rust painting internally, finishes and all				
	necessary accessories to installation complete as specified and detailed				
	in the drawings; to the Engineer's satisfaction. All tank accessories shall				
	be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
	150-200 micron union/ compression 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/ compression 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		

	e ID. 5.5: CEKE IN NWOYA DSTRICT lo. 3 : STORAGE RESERVOIR WORKS		Region:	North	
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	<u>Gates</u>				
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		
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 Carried to Collection				
BILL N	o. 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		<u> </u>	1	

Region: North

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, grabbing 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	200		
2.2	OD90mm PN6	m	205		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	2		
3.2	OD75mm	No.	Rate Only		
	Unequal tees				
3.3	OD90 x 75mm	No.	Rate Only		
3.4	OD90 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		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD50mm	No.	5		
	Total Carried to Collection		<u> </u>	<u> </u>	

Region: North

BILL N	Io.4 : DISTRIBUTION NETWORK		Region.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.2	OD90mm	No.	Rate Only		
6.3	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.				
7.3	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 lockable 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.	No.	18		
	Total Carried to Collection		<u> </u>		
_	Bill No. 4 Collection				
	Page 16				
	Page 17				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 5.6: ONGAI IN NWOYA DSTRICT

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. 5.6: ONGAI IN NWOYA DSTRICT		Region:	North	
BILL N Item No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS 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 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 surfaces 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				
3.1	<u>Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -</u> Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	${\sf m}^3$	12		
3.2	Imported murram.	m^3	10		
4	Single layer of geotextile laid to manufacturer'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; 240m² at Intake Site and 800m² at Pump Station.	m ²	1,050		
	Total Carried to Collection				

Region: North

No.	IN-SITU CONCRETE			Rate (UGx.)	/IIC~ \
					(UGx.)
	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	m^3	1.1		
•	the following thickness	111			
	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 retaining 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 chamfering 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 sloping formwork to walls including chamfering 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: North

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				
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 Spun 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: -				
	certient mortal linet, 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 m long, and of				
	the following sizes:-				
9.5	150 mm ND	No.	Rate Only		
	Total Carried to Collection				

Region: North

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, stainless steel.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as 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 sleeve pump anti-vandal protection structure to detail as per Drawings.	No.	0		
	Valve Surface Boxes				
10.4	Valve surface box with lockable cover securely attached to main body of	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 Module, rated flow Q = 20 m^3 /hr., rated head H = 70m 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 Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval		1		
	Total Carried to Collection		<u> </u>	1	

Region: North

ME4 PV Disconnect 1000-40-2 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 - P5/8 ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, 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	Unit No.	Qty.	Data (UO:)	Amount
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 - P5/8 ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, 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	No.	1	Rate (UGx.)	(UGx.)
ME6 Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc. ME7 PV Combiner Pressure Switch and Gauge - P5/8 ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, 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		1		
etc. ME7 PV Combiner Pressure Switch and Gauge - P5/8 ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. WE11 Wire kit array from solar array to controller with MC4 connectors	No.	1		
ME7a Pressure Switch and Gauge - P5/8 ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. WE11 Wire kit array from solar array to controller with MC4 connectors	Item	1		
ME8 Sinewave filter - SWAP0017D. ME9 10mm² Borehole drop cable, 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. WE11 Wire kit array from solar array to controller with MC4 connectors	No.	1		
ME9 10mm² Borehole drop cable, ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. Wire kit array from solar array to controller with MC4 connectors	No.	1		
ME10 10mm² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. ME10a 6mm² UV Single Cable. WE11 Wire kit array from solar array to controller with MC4 connectors	No.	1		
ME10a 6mm² UV Single Cable. Wire kit array from solar array to controller with MC4 connectors	m	5		
ME11 Wire kit array from solar array to controller with MC4 connectors	m	100		
	m	60		
IE11a Adapter box	No.	2		
	No.	1		
ME12 Pump mechanical control fittings as detailed on the Pump House Drawings No.	Item	1		
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		
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	No.	5		
Alarm System ME16 GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors	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. 5.6: ONGAI IN NWOYA DSTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
tem No.	Description 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 gauge 500 polythene sheet.	m²	220		
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	Sum	1		
	Fences_				
X6a	Galvanized 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	40		
X6b	Galvanized 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.	1		
	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		<u> </u>	1	

Region: North

	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS	rtegion.	
Item No.	Description		Amount (UGx.)
	Bill No. 1 Collection		
	Page 2		
	Page 3		
	Page 4		
	Page 5		
	Page 6		
	Page 7		
	T.(. D'! N. 40 14 D'! 0		
	Total Bill No. 1 Carried to Bill Summary		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
					(00/11)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
	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 PN16	m	450		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, 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	OD90 female adapter	No.	2		
	·				

Item No. PIF	2: TRANSMISSION MAINS escription alves and Penstocks ir Valves langed CI double orifice air relief valve, DN50mm, as specified ,flanges ISO 2441, complete with isolating gate valve to ISO 7259, flange daptors, distance pieces, and all fittings necessary to make the stallation on pipes of the following sizes, all to PN10, include chamber as specified. N65mm //ashouts	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.1 DN 9 Wa con yal ma PN 9.1 DN	ir Valves langed CI double orifice air relief valve, DN50mm, as specified ,flanges ISO 2441, complete with isolating gate valve to ISO 7259, flange daptors, distance pieces, and all fittings necessary to make the stallation on pipes of the following sizes, all to PN10, include chamber is specified. N65mm		1		
8.1 DN 9 Wa COI Val Ma PN 9.1 DN	anged Cl double orifice air relief valve, DN50mm, as specified ,flanges ISO 2441, complete with isolating gate valve to ISO 7259, flange daptors, distance pieces, and all fittings necessary to make the stallation on pipes of the following sizes, all to PN10, include chamber is specified. N65mm		1		
8.1 DN 9 Wa Cor val ma PN 9.1 DN	daptors, distance pieces, and all fittings necessary to make the stallation on pipes of the following sizes, all to PN10, include chamber is specified. N65mm		1		
8.1 DN 9 Wa con val ma PN 9.1 DN	daptors, distance pieces, and all fittings necessary to make the stallation on pipes of the following sizes, all to PN10, include chamber is specified. N65mm	No.	1		
8.1 DN 9 Wa con yan PN 9.1 DN	stallation on pipes of the following sizes, all to PN10, include chamber s specified. N65mm	No.	1		
8.1 DN 9 Wa COI Val PN 9.1 DN	s specified. N65mm /ashouts	No.	1		
8.1 DN 9 Wa Wa cor val ma PN 9.1 DN	N65mm /ashouts	No.	1		
9 Wa Wa cor val ma PN 9.1 DN	/ashouts	No.	1		
wa cor val ma PN 9.1 DN					
9.1 DN	lachout as ansaified in the drawings, complete with plactic				
9.1 DN	/ashout as specified in the drawings, complete with plastic				
yal ma PN 9.1 DN	ompression pipe fittings; tee, drainage pipes, union ball valve, flap				
9.1 DN	alve, stone masonry outfall structure and all other fittings necessary to				
9.1 DN	ake the complete installation on pipes of the following sizes; all to				
PIF	N10 including valve surface box to detail.				
	N65mm	No.	1		
	IPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	ther Chambers				
Ma	lasonry air valve chamber, complete as specified in the drawings, and				
	the following depths				
	epth not exceeding 1.5m	No.	2		
Va	alve Surface Boxes				
Va	alve surface box for DN100 - DN300 valves, with lockable cover				
	ecurely attached to main body of surface box by chain or bolt, include				
	own pipe, complete as specified and to the following depths				
	epth not exceeding 1.5m	No.	2		
Re	einstatement				
Ro	oads				
Bro	reaking up, temporary and permanent reinstatement of gravel roads for				
	e following pipe sizes				
11 No	ot exceeding DN300mm	m			
<u>Su</u>	<u>urrounds</u>				
Pir	ipe surrounds, of selected excavated granular material, for the				
foll	Illowing pipe sizes				
12.1 No	ot exceeding DN200mm	m			

Region: North

Total Carried to Collection Unit Oty. Rate (UGx.) Amount (UGx.)	BILL N	o. 2 : TRANSMISSION MAINS				
12.2 Not exceeding DN200mm		Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2 Not exceeding DN200mm m Rate Only Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm m Rate Only 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. No. 14 Total Carried to Collection Page 9 Page 10		Pipe surrounds, of imported granular material, for the following pipe				
Pipe surrounds, of mass concrete, for the following pipe sizes Not exceeding DN200mm 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. No. 14 Total Carried to Collection Page 9 Page 10						
12.3 Not exceeding DN200mm m Rate Only 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. No. 14 Total Carried to Collection Page 9 Page 10	12.2	Not exceeding DN200mm	m	Rate Only		
12.3 Not exceeding DN200mm m Rate Only 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. No. 14 Total Carried to Collection Page 9 Page 10		Pipe surrounds, of mass concrete, for the following pipe sizes				
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. No. 14 Total Carried to Collection Page 9 Page 10	12.3		m	Rate Only		
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. No. 14 Total Carried to Collection Page 9 Page 10		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. No. 14 Total Carried to Collection Page 9 Page 10		Thrust Blocks				
13 Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 14 Total Carried to Collection Bill No. 2 Collection Page 9 Page 10						
Diameter not exceeding DN200mm Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 14 Total Carried to Collection Bill No. 2 Collection Page 9 Page 10						
Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 14 Total Carried to Collection Bill No. 2 Collection Page 9 Page 10	13		No.	Rate Only		
Marker Posts Marker posts for pipes, gate valves, air valves, washouts. No. 14 Total Carried to Collection Bill No. 2 Collection Page 9 Page 10		Other Pipework Ancillaries				
Total Carried to Collection Bill No. 2 Collection Page 9 Page 10						
Bill No. 2 Collection Page 9 Page 10	14	Marker posts for pipes, gate valves, air valves, washouts.	No.	14		
Page 9 Page 10		Total Carried to Collection				
Page 9 Page 10		Dill No. 2 Callestion				
Page 10		Bill No. 2 Collection				
		Page 9				
Page 11		Page 10				
Page 11						
		Page 11				
Total Bill No. 2 Carried to Bill Summary		Total Rill No. 2 Carried to Rill Summany				

	o. 3 : STORAGE RESERVOIR WORKS				
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower				
_	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.				
	lollowing height and reservior capacities.				
2.1	Height; 6.0m for 30m ³ Tank.	No.	1		
3	Tanks				
	Supply and Install a fabricated 6.0mm thick mild steel plate horizontal				
	cylindrical tank with 1No. 0.6m wide access man way, water level				
	indicator (scale in cubic metres), with inlet, outlet, washout and overflow				
	connection complete with access points, ventilators (2 nr), and internal				
	access ladders, inclusive of anti-rust painting internally, finishes and all				
	necessary accessories to installation complete as specified and detailed				
	in the drawings; to the Engineer's satisfaction. All tank accessories shall				
	be of hot dipped galvanised steel.				
3.1	Reservoir: 30m ³ nominal capacity erected on a 6m high tower	No.	1		
	450 200 micron union/ commerced to the class IDVO V. Commerced				
	150-200 micron union/ compression 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 :-				
1.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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: North

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 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvanized 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				
	, g g				
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				
	Ziii Noi o doillean				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				
ı	rotal bill No. 3 Carried to bill Suffilliary				

Region: North

	o.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, grabbing 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	105		
2.3	OD90mm PN6	m	225		
	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 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.4	OD63mm	No.	5		
	Total Carried to Collection				

	e ID. 5.6: ONGAI IN NWOYA DSTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
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.	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 lockable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.4	DN50mm	No.	5		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	18		
	Total Carried to Collection				
	Dill No. 4 Collection				
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary				

Region: North

Scheme ID. 5.7: ONYOM TIL IN NWOYA DSTRICT

BILL SUMMARY

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	

Region: North

	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	1 1	A
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 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		
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 top/vegetable soil.	m^3	10		
	Total Carried to Collection		<u> </u>	1	

Region: North

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		ixegion.		
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.	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: -				
5	Insitu Concrete 75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm 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	2200mm 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. 1200mm diameter; height n.e. 8m	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: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		rtogio	HOIGH	
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		
11	Bellmouths 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				
13	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	Steel grating 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		
15	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. Internal diameter; 1200x200mm	Item	Rate Only		
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		
	Total Carried to Collection				

	e ID. 5.7: ONYOM TIL IN NWOYA DSTRICT o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region:	North	
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 = 22 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	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 Array 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	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		
	Total Carried to Collection				

Region: North

BILL N	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
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/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 gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
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	<u> </u>	<u> </u>	<u> </u>	

Region: North

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		Region.	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6a	Fences Galvanized 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	Galvanized 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.	1		
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		
Х9	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 No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

Region: North

	o. 2 : TRANSMISSION MAINS		Region.	north.	
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, grabbing 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		
3.1	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m OD75mm HDPE PN16	m	530		
5	PIPEWORK - FITTINGS AND VALVES <u>Cast or Spun Iron Pipe Fittings</u> <u>Bends</u>				
5.1	Galvanized iron threaded socket 45° bends, 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				
6.3	DN65mm PN10 PN16 HDPE Compression fitting to DIN 8074/BS 5114	No.	1		
7 7.1	Equal Adapters OD90 female adapter	No.	2		
	Total Carried to Collection				
<u> </u>	TOTAL VALLET TO VOICOUOTI				

	e ID. 5.7: ONYOM TIL IN NWOYA DSTRICT lo. 2 : TRANSMISSION MAINS		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.1	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. 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 PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers	No.	1		
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	No.	2		
10.2	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 Reinstatement Roads	No.	3		
11	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm Surrounds Pipe surrounds, of selected excavated granular material, for the	m	12		
12	following pipe sizes Not exceeding DN200mm Total Carried to Collection	m	Rate Only		

Region: North

BILL N	o. 2 : TRANSMISSION MAINS		rtegion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				, ,
	<u>sizes</u>				
12.2	Not exceeding DN200mm	m	60		
40.0	Pipe surrounds, of mass concrete, for the following pipe sizes		00		
12.3	Not exceeding DN200mm	m	36		
	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	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
14	Marker Posts	No	24		
14	Marker posts for pipes, gate valves, air valves, washouts.	No.	24		
	Total Carried to Collection	1	1		
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	ago 10				
	Total Bill No. 2 Carried to Bill Summary				

Region: North

	Io. 3 : STORAGE RESERVOIR WORKS		Negion.		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir Tower 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 30m ³ Tank.	No.	1		
3	Tanks Supply and Install a fabricated 6.0mm thick mild steel plate horizontal cylindrical tank with 1No. 0.6m wide access man way, water level indicator (scale in cubic metres), with inlet, outlet, washout and overflow connection complete with access points, ventilators (2 nr), and internal access ladders, inclusive of anti-rust painting internally, finishes and all necessary accessories to installation complete as specified and detailed in the drawings; to the Engineer's satisfaction. All tank accessories shall be of hot dipped galvanised steel.				
3.1	Reservoir: 30m³ nominal capacity erected on a 6m high tower	No.	1		
4	150-200 micron union/ compression 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	DN75mm, PN10	No.	1		
5	150-200 micron union/ compression 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: North

	o. 3 : STORAGE RESERVOIR WORKS		Region.		
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	$500 \times 500 \times 50$ mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized 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	L			
İ	Bill No. 3 Collection				
	Bill No. 3 Collection				
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	Total Bill No. 3 Carried to Bill Summary				
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-	e ID. 5.7: ONYOM TIL IN NWOYA DSTRICT o.4 : DISTRIBUTION NETWORK		Region:	North	
Item	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, grabbing 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				
2.1	trench to the following depths not exceeding 1.5m OD75mm PN6	_ m	250		
	OD90mm PN6	m m	40		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	2		
	Unequal tees				
3.2	OD90 x 75mm	No.	1		
3.3	OD90 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
	OD75mm	No.	Rate Only		
4.2	OD63mm	No.	Rate Only		
5	End caps				
5.4	OD63mm	No.	2		
	Total Carried to Collection	•	•		

	e ID. 5.7: ONYOM TIL IN NWOYA DSTRICT Io.4 : DISTRIBUTION NETWORK		Region:	North	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	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.				
6.3	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	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 lockable 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.	No.	18		
	Total Carried to Collection				
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	Bill No. 4 Collection				
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	Total Bill No. 4 Carried to Bill Summary		<u> </u>		