

LOT 4
MARSABIT – NORTH HERR & LAISAMIS

SCHEDULE NO. 1 - PLANT AND MANDATORY SPARE PARTS SUPPLIED FROM ABROAD							
Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹
					(1)	(2)	(1) x (2)
EL GADHE 75 kWp (75kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	75 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	75 kW (AC) Solar PV Inverters			Lot	1		
4	50 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	188 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	50 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability,			Lot	1		

	and compliance with all relevant local and international codes and standards at the time of installation.						
EL GADHE SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	218		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	218		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	11.27		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	133		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	149		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	0		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	30		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	6480		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	260.4		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	217		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	217		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	217		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	217		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	0		
29	14M MV Concrete Pole (TSP/03/005-1)			No	0		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	0		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	0		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	0		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	0		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	0		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	0		
EL GADHE SUBTOTAL B							
C	Mandatory spares						
37	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
EL GADHE SUBTOTAL C							

Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹
					(1)	(2)	(1) x (2)
BUBISA 250 kWp (250kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	250 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	250 kW (AC) Solar PV Inverters			Lot	1		
4	175 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	625 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	175 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.							
	BUBISA SUBTOTAL A							
B	Power Distribution Network (PDN)							
B1	3-phase and single-phase LV Distribution Line							
14	10M LV Concrete Pole (TSP/03/005-1)			No	898			
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	898			
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	25.44			
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	488			
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	691			
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	1			
B2	Other PDN Items							
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	270			
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	28500			
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	1150.8			
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	959			
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	959			
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	959			

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	959		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	37		
29	14M MV Concrete Pole (TSP/03/005-1)			No	8		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	45		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	2.42		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	31		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	0		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	3		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	3		
B5	Step up Transformer						
37	415V/11KV 200KVA transformer			No	1		

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1		
		BUBISA SUBTOTAL B				C	Mandatory spares
39	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
		BUBISA SUBTOTAL C					

Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹
					(1)	(2)	(1) x (2)
GATAB 100 kWp (100kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	100 kWp (D.C.) Standard monocrystalline Silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	100 kW (A.C.) Solar PV Inverters			Lot	1		
4	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	250 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.						
GATAB SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	311		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	311		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	17.15		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	164		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	188		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	21		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	0		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	6360		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	254.4		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	212		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	212		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	212		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing.			No	212		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	28		
29	14M MV Concrete Pole (TSP/03/005-1)			No	4		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	32		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	1.88		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	12		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	3		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	2		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	2		
B5	Step up Transformer						
37	415V/11KV 100KVA transformer			No	1		

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1		
		GATAB SUBTOTAL B					
C	Mandatory spares						
39	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
		GATAB SUBTOTAL C					

Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹
					(1)	(2)	(1) x (2)
GAS 100 kWp (100kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	100 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	100 kW (AC) Solar PV Inverters			Lot	1		
4	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	250 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.						
GAS SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	191		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	191		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	9.61		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	165		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	168		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No			
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	60		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	10620		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	427.2		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	356		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	356		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	356		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	356		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	0		
29	14M MV Concrete Pole (TSP/03/005-1)			No	0		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	0		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	0		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	0		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	0		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	0		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	0		
					GAS SUBTOTAL B		
C	Mandatory spares						
37	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
					GAS SUBTOTAL C		

Item	Description	Quantity and capacity of single unit ²	Code ³	Unit ⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹
					(1)	(2)	(1) x (2)
SOUTH HERR 160 kWp (160kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	160 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	160 kW (AC) Solar PV Inverters			Lot	1		
4	130 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	400 kWh Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	300 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Lot	1		

		SOUTH HORR SUBTOTAL A					
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	420		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	420		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	20.38		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	297		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	250		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	42		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	0		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	14460		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	578.4		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	482		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	482		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	482		
26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	482		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		

B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	48		
29	14M MV Concrete Pole (TSP/03/005-1)			No	7		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	55		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	2.96		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	22		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	6		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	2		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	2		
B5	Step up Transformer						
37	415V/11KV 150KVA transformer			No	1		
38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1		
SOUTH HARR SUBTOTAL B							

SCHEDULE NO. 2 - PLANT AND MANDATORY SPARE PARTS FROM WITHIN THE EMPLOYER'S COUNTRY

Item	Description	Quantity and capacity of single unit ²	Code ³	Unit ⁴	Qty	EXW Unit Price ¹	EXW Total Price ¹
					(1)	(2)	(1) x (2)
EL GADHE 75 kWp (75kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	75 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	75 kW (AC) Solar PV Inverters			Lot	1		
4	50 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	188 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	50 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.						
EL GADHE SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	218		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	218		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	11.27		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	133		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	149		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	0		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	30		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	6480		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	260.4		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	217		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	217		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	217		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	217		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	0		
29	14M MV Concrete Pole (TSP/03/005-1)			No	0		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	0		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	0		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	0		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	0		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	0		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	0		
EL GADHE SUBTOTAL B							
C	Mandatory spares						
37	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
EL GADHE SUBTOTAL C							

Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	EXW Unit Price ¹	EXW Total Price ¹
					(1)	(2)	(1) x (2)
BUBISA 250 kWp (250kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	250 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	250 kW (AC) Solar PV Inverters			Lot	1		
4	175 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	625 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	175 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		

13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Lot	1		
BUBISA SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	898		
15	LV Concrete Pole fittings-clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	898		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	25.44		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	488		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	691		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	1		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	270		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	28500		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	1150.8		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	959		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3),			No.	959		

	(TSP/04/011), (TSP/02/003-1)	(TSP/03/003),					
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	959		
26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	959		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	37		
29	14M MV Concrete Pole (TSP/03/005-1)			No	8		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	45		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	2.42		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	31		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	0		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	3		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	3		
B5	Step up Transformer						
37	415V/11KV 200KVA transformer			No	1		

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1		
		BUBISA SUBTOTAL B				C	Mandatory spares
39	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
		BUBISA SUBTOTAL C					

Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	EXW Unit Price ¹	EXW Total Price ¹
					(1)	(2)	(1) x (2)
GATAB 100 kWp (100kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	100 kWp (D.C.) Standard monocrystalline Silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	100 kW (A.C.) Solar PV Inverters			Lot	1		
4	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	250 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.						
GATAB SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	311		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	311		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	17.15		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	164		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	188		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	21		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	0		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	6360		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	254.4		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	212		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	212		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	212		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	212		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	28		
29	14M MV Concrete Pole (TSP/03/005-1)			No	4		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	32		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	1.88		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	12		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	3		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	2		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	2		
B5	Step up Transformer						
37	415V/11KV 100KVA transformer			No	1		

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Set	1		
		GATAB SUBTOTAL B					
C	Mandatory spares						
39	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
		GATAB SUBTOTAL C					

Item	Description	Quantity and capacity of single unit ²	Code ₃	Unit ⁴	Qty	EXW Unit Price ¹	EXW Total Price ¹
					(1)	(2)	(1) x (2)
GAS 100 kWp (100kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	100 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	100 kW (AC) Solar PV Inverters			Lot	1		
4	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	250 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.						
GAS SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	191		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	191		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	9.61		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	165		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	168		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No			
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	60		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	10620		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	427.2		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	356		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	356		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	356		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	356		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	0		
29	14M MV Concrete Pole (TSP/03/005-1)			No	0		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	0		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	0		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	0		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	0		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	0		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	0		
					GAS SUBTOTAL B		
C	Mandatory spares						
37	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
					GAS SUBTOTAL C		

Item	Description	Quantity and capacity of single unit ²	Code ³	Unit ⁴	Qty	EXW Unit Price ¹	EXW Total Price ¹
					(1)	(2)	(1) x (2)
SOUTH HRR 160 kWp (160kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	160 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	160 kW (AC) Solar PV Inverters			Lot	1		
4	130 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	400 kWh Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	300 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for safety, reliability, and compliance with all relevant local and			Lot	1		

	international codes and standards at the time of installation.						
SOUTH HERR SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)			No	420		
15	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts,nuts,stays, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	420		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	20.38		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	297		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	250		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	42		
B2	Other PDN Items						
20	Service Cable (25mm ² PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	0		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	14460		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	578.4		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	482		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	482		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	482		

26	1ftX1ftX3/4ft metallic meter boards (galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for meter & MCB mounting, Service cable entry and Earthing .			No	482		
27	Other Items not Mentioned above but required for installation and commissioning of the single and three phase Distribution line for Mini Grid and end user installation such as insulators, binding wires, fittings including nuts, bolts, Danger Plates, Name Plates, anti-climbing Barbed wire and accessories etc. on turn-key basis			Lot	1		
B3	11KV MV Distribution line						
28	12M MV Concrete Pole (TSP/03/005-1)			No	48		
29	14M MV Concrete Pole (TSP/03/005-1)			No	7		
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	55		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	2.96		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	22		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	6		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 50KVA transformer			No	2		
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)			Set	2		
B5	Step up Transformer						
37	415V/11KV 150KVA transformer			No	1		

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1		
SOUTH HARR SUBTOTAL B							
C	Mandatory spares						
39	Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.			Lot	1		
SOUTH HARR SUBTOTAL C							

TOTAL (to Schedule No. 7. Grand Summary)			
Name of Bidder			_____
Signature of Bidder			_____
¹ Specify currency. Create and use as many columns for Unit Price and Total Price as there are currencies.			
² Bidder to provide further breakdown of items quoted for i.e. the exact number of single units that make up the item as well as the size/capacity of a single unit.			
³ Lot per km - Bidders are advised to assume a span length of 100m for Medium Voltage network (11kV) and 50m for Low Voltage network.			
NB – Refer to Employer’s Requirements & Technical Specifications for details of each item (Bidding Documents Volumes II and IV)			

SCHEDULE NO. 3 - SURVEY & DESIGN SERVICES

LOT 4 SOLAR PV MINIGRIDS					
Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
1	Survey and Design of SPV Modules & Inverters including structures	Lot	5		
2	Design of Battery Energy Storage System, including Inverter/Charger	Lot	5		
3	SCADA system design	Lot	5		
4	Diesel Generator Design	Lot	5		
5	Design of other SPGP items	Lot	5		
6	Survey and Design of Power Distribution Network	Lot	5		
7	Design of other PDN items	Lot	5		
8	Design of Civil/Structural works and associated works	Lot	5		
	Lot 4 SUBTOTAL				
TOTAL (to Schedule No. 7. Grand Summary)					
				Name of Bidder	_____
				Signature of Bidder	_____

¹ Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1

NB – Refer to Employer’s Requirements & Technical Specifications for details of each item (Bidding Documents Volumes II and IV)

The design costs should include Survey (including picking distance of the solar plant from the existing KPLC grid), premises picking, customer sensitization, customer data collection, transformer positioning/picking, LV line wayleaves consent acquisition, and detailed design including design proposals/information updating on the KPLC Facility Data Base (FDB), preparation and submission of drawings. The civil and structural works design shall include Geotechnical Survey, Topographical Survey, hydrogeological survey and all Designs and drawings submission and all statutory approvals.

SCHEDULE NO. 4 - INSTALLATION, TESTING, COMMISSIONING AND OTHER SERVICES

Item	Description	Unit ²	Quantity	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
EL GADHE 75 kWp (75 kW AC) SOLAR PV MINI GRID					
A	Solar Power Generation Plant (SPGP)				
1	Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger	Lot	1		
3	Installation, Erection, Testing and Commissioning of SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning of Diesel Generator	Lot	1		
5	Installation of all balance of system components to complete erection of the SPGP	Lot	1		
6	Testing & commissioning of all supplied equipment including DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance contract	Lot	1		
			EL GADHE SUBTOTAL A		
B	Power Distribution Network				
B-1	Pegging, Erection, dressing and stringing of LV lines- 3 phase lines and Single phase lines				
7	Pole Erection and dressing- Concrete	No	218		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	11.27		
9	PME installation	No	133		
10	LV Stay hole digging, making & Erection	No	149		
11	LV Strut hole digging, making & Erection	No	0		
B-2	Service cable				
12	Service cable installation complete with terminations on both the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation	No.	217		
13	Installation of Ready Boards, Earthing and Testing	No.	217		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	217		
15	Class C-2 ERC Wiring Certificates	No	217		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	0		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	0		
18	MV Stay hole digging, making & Erection	No	0		
19	MV Flying Stay hole digging, making & Erection	No	0		
20	MV Strut hole digging, making & Erection	No	0		
B-4	Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer				

21	Transformer Mounting, Dressing, Welding and Earthing	No	0		
EL GADHE SUBTOTAL B					
C	Civil works				
22	Platform Works-Earthworks and slope protection, site clearing and disposal, Galvanised Boundary chain link fence with steel posts for the entire minigrid developed area, Gates, SPGP area barricade fence. Solar panels reinforced concrete foundations/helical anchor foundations, Generator Equipment Plinth, 2000L underground fuel storage tank, Access road, SPGP Internal road, Storm water drainage.	Lot	1		
23	Cable network and conduits	Lot	1		
24	Containerized technology solution for Office Building and Control Room, Air conditioners.	Lot	1		
25	Galvanized Steel Structures- solar panels steel support structurers.	Lot	1		
26	Masonry guard house	Lot	1		
27	Masonry twin VIP Pit Latrine	Lot	1		
28	Security Systems, SPGP Outdoor Lighting and Perimeter Lighting, Control room and office building security lighting, Guard House Alarm System and danger and warning plate.	Lot	1		
29	Rain water harvesting and Storage	Lot	1		
30	Fire Prevention System-Fire Extinguishers, and Fire Suppression System at the BESS Section.	Lot	1		
EL GADHE SUBTOTAL C					

Item	Description	Unit ²	Quantity	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
BUBISA 250 kWp (250 kW AC) SOLAR PV MINI GRID					
A	Solar Power Generation Plant (SPGP)				
1	Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger	Lot	1		
3	Installation, Erection, Testing and Commissioning of SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning of Diesel Generator	Lot	1		
5	Installation of all balance of system components to complete erection of the SPGP	Lot	1		
6	Testing & commissioning of all supplied equipment including DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance contract	Lot	1		
BUBISA SUBTOTAL A					
B	Power Distribution Network				
B-1	Pegging, Erection, dressing and stringing of LV lines- 3 phase lines and Single phase lines				
7	Pole Erection and dressing- Concrete	No	898		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	25.44		
9	PME installation	No	488		
10	LV Stay hole digging, making & Erection	No	691		
11	LV Strut hole digging, making & Erection	No	1		
B-2	Service cable				
12	Service cable installation complete with terminations on both the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation	No.	959		
13	Installation of Ready Boards, Earthing and Testing	No.	959		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	959		
15	Class C-2 ERC Wiring Certificates	No	959		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	45		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	2.42		
18	MV Stay hole digging, making & Erection	No	31		
19	MV Flying Stay hole digging, making & Erection	No	0		
20	MV Strut hole digging, making & Erection	No	0		
B-4	Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer				
21	Transformer Mounting, Dressing, Welding and Earthing	No	3		

B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	BUBISA SUBTOTAL B				
C	Civil works				
23	Platform Works-Earthworks and slope protection, site clearing and disposal, Galvanised Boundary chain link fence with steel posts for the entire minigrd developed area, Gates, SPGP area barricade fence. Solar panels reinforced concrete foundations/helical anchor foundations, Generator Equipment Plinth, 2000L underground fuel storage tank, Access road, SPGP Internal road, Storm water drainage.	Lot	1		
24	Cable network and conduits	Lot	1		
25	Containerized technology solution for Office Building and Control Room, Air conditioners.	Lot	1		
26	Galvanized Steel Structures- solar panels steel support structurers.	Lot	1		
27	Masonry guard house	Lot	1		
28	Masonry twin VIP Pit Latrine	Lot	1		
29	Security Systems, SPGP Outdoor Lighting and Perimeter Lighting, Control room and office building security lighting, Guard House Alarm System and danger and warning plate.	Lot	1		
30	Rain water harvesting and Storage	Lot	1		
31	Fire Prevention System-Fire Extinguishers, and Fire Suppression System at the BESS Section.	Lot	1		
	BUBISA SUBTOTAL C				

Item	Description	Unit ²	Quantity	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
GATAB 100 kWp (100 kW AC) SOLAR PV MINI GRID					
A	Solar Power Generation Plant (SPGP)				
1	Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger	Lot	1		
3	Installation, Erection, Testing and Commissioning of SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning Diesel Generator	Lot	1		
5	Installation of all balance of system components to complete erection of the SPGP	Lot	1		
6	Testing & commissioning of all supplied equipment including DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance contract	Lot	1		
			GATAB SUBTOTAL A		
B	Power Distribution Network				
B-1	Pegging, Erection, dressing and stringing of LV lines- 3 phase lines and Single phase lines				
7	Pole Erection and dressing- Concrete	No	311		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	17.5		
9	PME installation	No	164		
10	LV Stay hole digging, making & Erection	No	188		
11	LV Strut hole digging, making & Erection	No	21		
B-2	Service cable				
12	Service cable installation complete with terminations on both the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation	No.	212		
13	Installation of Ready Boards, Earthing and Testing	No.	212		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	212		
15	Class C-2 ERC Wiring Certificates	No	212		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	32		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	1.88		
18	MV Stay hole digging, making & Erection	No	12		
19	MV Flying Stay hole digging, making & Erection	No	3		
20	MV Strut hole digging, making & Erection	No	0		
B-4	Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer				
21	Transformer Mounting, Dressing, Welding and Earthing	No	2		

B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	GATAB SUBTOTAL B				
C	Civil works				
23	Platform Works-Earthworks and slope protection, site clearing and disposal, Galvanised Boundary chain link fence with steel posts for the entire minigrd developed area, Gates, SPGP area barricade fence. Solar panels reinforced concrete foundations/helical anchor foundations, Generator Equipment Plinth, 2000L underground fuel storage tank, Access road, SPGP Internal road, Storm water drainage.	Lot	1		
24	Cable network and conduits	Lot	1		
25	Containerized technology solution for Office Building and Control Room, Air conditioners.	Lot	1		
26	Galvanized Steel Structures- solar panels steel support structures.	Lot	1		
27	Masonry guard house	Lot	1		
28	Masonry twin VIP Pit Latrine	Lot	1		
29	Security Systems, SPGP Outdoor Lighting and Perimeter Lighting, Control room and office building security lighting, Guard House Alarm System and danger and warning plate.	Lot	1		
30	Rain water harvesting and Storage	Lot	1		
31	Fire Prevention System-Fire Extinguishers, and Fire Suppression System at the BESS Section.	Lot	1		
	GATAB SUBTOTAL C				

Item	Description	Unit ²	Quantity	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
GAS 100 kWp (100 kW AC) SOLAR PV MINI GRID					
A	Solar Power Generation Plant (SPGP)				
1	Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger	Lot	1		
3	Installation, Erection, Testing and Commissioning of SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning of Diesel Generator	Lot	1		
5	Installation of all balance of system components to complete erection of the SPGP	Lot	1		
6	Testing & commissioning of all supplied equipment including DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance contract	Lot	1		
				GAS SUBTOTAL A	
B	Power Distribution Network				
B-1	Pegging, Erection, dressing and stringing of LV lines- 3 phase lines and Single phase lines				
7	Pole Erection and dressing- Concrete	No	191		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	9.61		
9	PME installation	No	165		
10	LV Stay hole digging, making & Erection	No	168		
11	LV Strut hole digging, making & Erection	No	191		
B-2	Service cable				
12	Service cable installation complete with terminations on both the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation	No.	356		
13	Installation of Ready Boards, Earthing and Testing	No.	356		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	356		
15	Class C-2 ERC Wiring Certificates	No	356		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	0		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	0		
18	MV Stay hole digging, making & Erection	No	0		
19	MV Flying Stay hole digging, making & Erection	No	0		
20	MV Strut hole digging, making & Erection	No	0		
B-4	Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer				
21	Transformer Mounting, Dressing, Welding and Earthing	No	0		

		GAS SUBTOTAL B			
C	Civil works				
22	Platform Works-Earthworks and slope protection, site clearing and disposal, Galvanised Boundary chain link fence with steel posts for the entire minigrid developed area, Gates, SPGP area barricade fence. Solar panels reinforced concrete foundations/helical anchor foundations, Generator Equipment Plinth, 2000L underground fuel storage tank, Access road, SPGP Internal road, Storm water drainage.	Lot	1		
23	Cable network and conduits	Lot	1		
24	Containerized technology solution for Office Building and Control Room, Air conditioners.	Lot	1		
25	Galvanized Steel Structures- solar panels steel support structurers.	Lot	1		
26	Masonry guard house	Lot	1		
27	Masonry twin VIP Pit Latrine	Lot	1		
28	Security Systems, SPGP Outdoor Lighting and Perimeter Lighting, Control room and office building security lighting, Guard House Alarm System and danger and warning plate.	Lot	1		
29	Rain water harvesting and Storage	Lot	1		
30	Fire Prevention System-Fire Extinguishers, and Fire Suppression System at the BESS Section.	Lot	1		
		GAS SUBTOTAL C			

Item	Description	Unit ²	Quantity	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
SOUTH HARR 160 kWp (160 kW AC) SOLAR PV MINI GRID					
A	Solar Power Generation Plant (SPGP)				
1	Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger	Lot	1		
3	Installation, Erection, Testing and Commissioning of SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning of Diesel Generator	Lot	1		
5	Installation of all balance of system components to complete erection of the SPGP	Lot	1		
6	Testing & commissioning of all supplied equipment including DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance contract	Lot	1		
			SOUTH HARR SUBTOTAL A		
B	Power Distribution Network				
B-1	Pegging, Erection, dressing and stringing of LV lines- 3 phase lines and Single phase lines				
7	Pole Erection and dressing- Concrete	No	420		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	20.38		
9	PME installation	No	297		
10	LV Stay hole digging, making & Erection	No	250		
11	LV Strut hole digging, making & Erection	No	42		
B-2	Service cable				
12	Service cable installation complete with terminations on both the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation	No.	482		
13	Installation of Ready Boards, Earthing and Testing	No.	482		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	482		
15	Class C-2 ERC Wiring Certificates	No	482		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	55		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	2.96		
18	MV Stay hole digging, making & Erection	No	22		
19	MV Flying Stay hole digging, making & Erection	No	6		
20	MV Strut hole digging, making & Erection	No	0		
B-4	Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer				

21	Transformer Mounting, Dressing, Welding and Earthing	No	2		
B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
			SOUTH HORR SUBTOTAL B		
C	Civil works				
23	Platform Works-Earthworks and slope protection, site clearing and disposal, Galvanised Boundary chain link fence with steel posts for the entire minigrid developed area, Gates, SPGP area barricade fence. Solar panels reinforced concrete foundations/helical anchor foundations, Generator Equipment Plinth, 2000L underground fuel storage tank, Access road, SPGP Internal road, Storm water drainage.	Lot	1		
24	Cable network and conduits	Lot	1		
25	Containerized technology solution for Office Building and Control Room, Air conditioners.	Lot	1		
26	Galvanized Steel Structures- solar panels steel support structurers.	Lot	1		
27	Masonry guard house	Lot	1		
28	Masonry twin VIP Pit Latrine	Lot	1		
29	Security Systems, SPGP Outdoor Lighting and Perimeter Lighting, Control room and office building security lighting, Guard House Alarm System and danger and warning plate.	Lot	1		
30	Rain water harvesting and Storage	Lot	1		
31	Fire Prevention System-Fire Extinguishers, and Fire Suppression System at the BESS Section.	Lot	1		
			SOUTH HORR SUBTOTAL C		
D	Others				
32	Cost allocation for end-of-life (EOL) plan for all batteries and other potentially hazardous e-waste at the end of its useful life	Lot	1		
33	Offices facilities : Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery)	Site	5		
34	Provision of communication facilities for the employer	Lot	1		
35	Provision of Transport: Provide fuel and maintain with driver transport for exclusive use of the REREC project engineer for project supervision and coordination services (1 No. 4X4)	Vehicle/ Months	12		
36	Factory Acceptance Tests for Major Items	Lumpsum	1		
37	Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land value is determined)	Fixed amount	5	KSh. 1,000,000	KSh. 5,000,000
		SUBTOTAL D			
TOTAL (To Schedule No. 7. Grand Summary)					
		Name of Bidder _____			
		Signature of Bidder _____			
¹ Specify currency in accordance with ITB 18. Create and use as many columns for Unit Price and Total Price as there are currencies.					

² Lot per km - Bidders are advised to assume a span length of 100m for Medium Voltage network (11kV) and 50m for Low Voltage network.

SCHEDULE NO. 5 - ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY (ESHS) SERVICES

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹	
			(Sites)	Foreign Currency Portion	Local Currency Portion	Foreign	Local
			(1)	(2)	(3)	(1) X (2)	(1) X (3)
Air Quality: Dust and exhaust emissions							
1	Sprinkle water to minimize dust generation	Lot	5				
2	Enclose/ cover/ water stockpiles of excavated soil during dry or windy conditions	Lot	5				
3	Conduct air quality measurements on a monthly basis	Lot	5				
Solid Waste generation							
4	Provide proper facilities for holding, separating and storing waste to reduce exposure and damage by elements of weather	Lot	5				
5	Contract NEMA registered waste handlers to dispose, hazardous, obsolete and E-waste and contaminated soil	Lot	5				
6	Store hazardous products and wastes separately in well labelled containers	Lot	5				
Noise and Vibration							
7	Conduct noise measurements on a monthly basis	Lot	5				
Vegetation disturbance							
8	Plant and nurture (200) indigenous trees in selected areas in public/community institutions	Lot	5				
Fire hazards							
9	Designate smoking zone, fire assembly point and provide appropriate firefighting equipment	Lot	5				
10	Provide trained fire marshals	Lot	5				
Traffic congestion & damage to roads and other existing infrastructure							
11	Provide traffic marshals and signages	Lot	5				
Occupational safety and Health risks							
12	Awareness creation and training of staff on occupation health and safety issues	Lot	5				
13	Provide appropriate PPEs including Helmets, Safety Boots, Overalls, Dust Coats, Ear Muffs, Safety Harness, Gloves, Safety Glasses, etc	Lot	5				
14	Provide fully stocked first aid kit	Lot	5				
15	Provide insurance to the workers as per Work Injury and Benefits Act (WIBA) requirements	Lot	5				

16	Proper barricading and hazard communication and signage	Lot	5				
Training and Sensitization on Labour influx related impacts (Gender based violence)-Sexual abuse and exploitation and sexual harassment, HIV/AIDs, Alcohol and drugs abuse and crime							
17	Awareness creation to the workers and members of public on Abstinence, Being Faithful and Use of Condoms to prevent HIV/AIDs spread.	Lot	5				
18	Install information on the site billboard - 'Beware of HIV/AIDs, it's real, it kills' and other posters around site	Lot	5				
19	Provide adequate condoms at convenient locations	Lot	5				
Risks related to spread of COVID-19 to workers and locals							
20	Install hand washing facilities with adequate running water and soap	Lot	5				
21	Use thermal guns for everyone entering the site for monitoring temperatures levels	Lot	5				
Stakeholder Engagement							
22	Conduct stakeholder engagement forums in a culturally appropriate manner	Lot	5				
23	Conduct separate adequate public consultation for the VMGs where applicable	Lot	5				
TOTAL (To Schedule No. 7. Grand Summary)							
				Name of Bidder _____			
				Signature of Bidder _____			
¹ Specify currency in accordance with ITB 18. Create and use as many columns for Unit Price and Total Price as there are currencies. NB – For details of each item, refer to the Environmental, Social, Health and Safety Management Plan for proposed solar mini-grid for community facilities, enterprises, and households - Component 1 of the Kenya Off-grid Solar Access Project (Bidding Document Volume I)							

SCHEDULE NO. 6 - OPERATION & MAINTENANCE

Item	Description	Unit	Qty	% of O&M Contract Price	Unit Price ¹		Total Price ¹
					Local Currency Portion	Foreign Currency Portion	
						(optional)	
EL GADHE 75 kWp (75kW AC) SOLAR PV MINI GRID							
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5			
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5			
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5			
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5			
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18			
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18			
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18			
SUBTOTAL A							
BUBISA 250 kWp (250kW AC) SOLAR PV MINI GRID							
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5			
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5			
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5			
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5			
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18			
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18			
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18			
SUBTOTAL B							

GATAB 100 kWp (100kW AC) SOLAR PV MINI GRID							
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5			
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5			
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5			
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5			
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18			
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18			
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18			
SUBTOTAL C							
GAS 100 kWp (100kW AC) SOLAR PV MINI GRID							
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5			
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5			
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5			
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5			
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18			
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18			
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18			
SUBTOTAL D							
SOUTH HORR 1600 kWp (160kW AC) SOLAR PV MINI GRID							
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5			
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5			
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5			
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5			
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18			
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18			
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18			

		SUBTOTAL E		
	TOTAL (to Schedule No. 7. Grand Summary)			
	<i>Name of Bidder</i> _____			
	<i>Signature of Bidder</i> _____			
	' Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1			

SCHEDULE NO. 7 - GRAND SUMMARY

Item	Description	Total Price ¹	
		<i>Foreign</i>	<i>Local</i>
	Phase 1 - Supply and Installation		
1	Total Price of Schedule No 1 : Plant and Mandatory Spare Parts Supplied from Abroad		
2	Total Price of Schedule No 2 : Plant and Mandatory Spare Parts Supplied from Within the Employer's Country		
3	Total Price of Schedule No 3 : Survey & Design Services		
4	Total Price of Schedule No 4 : Installation, Testing, Commissioning, and Other Services		
5	Total Price of Schedule No 5 : Environmental, Social, Health And Safety (ESHS) Services		
	Phase 2 - Operations and Maintenance		
6	Total Price of Schedule No 6 : Operation & Maintenance		
	TOTAL (to Letter of Bid)		
		<i>Name of Bidder</i> _____	
		<i>Signature of Bidder</i> _____	

SCHEDULE NO. 8 - RECOMMENDED SPARE PARTS (NOT BE CONSIDERED FOR EVALUATION, BUT ONLY FOR INFORMATION)

Item	Description	Unit	Qty	Unit Price ¹		Total Price ¹
				<i>CIF or CIP</i>	<i>EXW</i>	(1) x (2) or (3)
				<i>(foreign parts)</i>	<i>(local parts)</i>	
				(1)	(2)	(3)
		<i>Name of Bidder</i> _____				
		<i>Signature of Bidder</i> _____				
¹ Specify currency. Create and use as many columns for Unit Price and Total Price as there are currencies.						