

LOT 2
TURKANA EAST, TURKANA SOUTH, TURKANA CENTRAL & LOIMA

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)
KALOKOL 450 kWp (450kW AC) SOLAR PV MINI-GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	450 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	450 kW (AC) Solar PV Inverters			Lot	1		
4	320 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	1125 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	320 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			Lot	1		

	required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.						
		KALOKOL 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	670		
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	670		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	48		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	500		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	580		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	20		
B2	Other PDN Items						
20	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	600		
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)			M	48,000		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	1944		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	1620		
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.	1620		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	1620		

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	1620		
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	150		
29	14M MV Concrete Pole (TSP/03/005-1)			No	36		
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	186		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	13.82		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	80		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	15		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
35	11KV 100KVA transformer			No	0		
36	11KV 50KVA transformer			No	6		
37	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	6		
B5	Step up Transformer						
37	415V/11KV 315KVA transformer			No	1		

38	All system components for interconnecting the inverters and the 11kv distribution transformers, including but not limited to: panelboards, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
		KALOKOL 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		
		KALOKOL 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)
LOCHWAANGIAMATAK 120 kWp (120 kW AC) SOLAR MINI-GRID							
A1	SPV Modules & Inverters						
1	120 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	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 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	82 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.						
	LOCHWAANGIAMATAK 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	247		
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	247		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	23		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	139		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	127		
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	120		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)			M	6600		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	268.8		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	224		
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.	224		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	224		

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	224		
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	1		
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	29		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	1.72		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	7		
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	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, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
	LOCHWAANGIAMATAK 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		
	LOCHWAANGIAMATAK 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)
LORENGIPPI 75 kWp (75 kW 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	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	188 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	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	Security equipment including CCTV cameras, IR sensors with video display at control room.			Lot	1		
11	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
12	Auxiliary power supply as per specifications			Lot	1		
13	Air conditioners for the control room as per specifications.			Lot	1		
14	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,			Lot	1		

	<p>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.</p>						
	LORENGIPPI SUBTOTAL A						
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
15	10M LV Concrete Pole (TSP/03/005-1)			No	129		
16	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	129		
17	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	9		
18	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	115		
19	LV Concrete stays- (Stay wire, stay block, stay rod)			No	98		
20	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	2		
B2	Other PDN Items						
21	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	150		
22	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	7920		
23	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	322.8		
24	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	269		
25	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	269		
26	Ready Boards complete with mounting accessories (TSP/14/051)			No.	269		

27	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	269		
28	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						
29	12M MV Concrete Pole (TSP/03/005-1)			No	55		
30	14M MV Concrete Pole (TSP/03/005-1)			No	11		
31	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	66		
32	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	5.75		
33	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	33		
34	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	5		
35	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
36	11KV 50KVA transformer			No	2		
37	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, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
	LORENGIPPI 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		
	LORENGIPPI 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)
LOMUNYENAKWAN 120 kWp (120kW AC) SOLAR PV MINI-GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	120 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	120 kW (a.c.) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 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	82 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			Lot	1		

	compliance with all relevant local and international codes and standards at the time of installation.						
	LOMUNYENAKWAN 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	205		
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	205		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	12		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	100		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	108		
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	5280		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	211.2		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	176		
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.	176		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	176		

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	176		
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		
	LOMUNYENAKWAN 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		
	LOMUNYENAKWAN 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)
NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	120 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	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 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	82 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			Lot	1		

	with all relevant local and international codes and standards at the time of installation.						
	NAMUKUSE 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	248		
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	248		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	13.45		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	22		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	207		
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	60		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	7920		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	319.2		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	266		
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.	266		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	266		

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	266		
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	19		
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	23		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	1.42		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	14		
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	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, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
	NAMUKUSE 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		
	NAMUKUSE 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)
NAPOSIMORU 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			Lot	1		

	required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.						
	NAPOSIMORU 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	278		
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	278		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	13.79		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	156		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	128		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	0		
B2	Other PDN Items						
20	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	60		
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	7260		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	292.8		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	244		
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.	244		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	244		

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	244		
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		
	NAPOSIMORU 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		
	NAPOSIMORU 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 Bidders shall enter a code representing the country of origin of all imported plant and equipment.	
⁴ 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)	

Country of Origin Declaration Form			
Item	Description	Code	Country

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)
KALOKOL 450 kWp (450kW AC) SOLAR PV MINI-GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	450 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	450 kW (AC) Solar PV Inverters			Lot	1		
4	320 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	1125 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	320 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel			Lot	1		

	operation with shunt-trip breakers for auto-start capability						
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		
		KALOKOL 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	670		
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	670		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	48		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	500		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	580		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	20		
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	600		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)			M	48,000		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	1944		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	1620		
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.	1620		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	1620		
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	1620		
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	150		
29	14M MV Concrete Pole (TSP/03/005-1)			No	36		
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	186		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	13.82		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	80		
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	15		
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		

B4	11KV Distribution Transformer						
35	11KV 100KVA transformer			No	0		
36	11KV 50KVA transformer			No	6		
37	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	6		
B5	Step up Transformer						
37	415V/11KV 315KVA transformer			No	1		
38	All system components for interconnecting the inverters and the 11kv distribution transformers, including but not limited to: panelboards, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
		KALOKOL 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		
		KALOKOL 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)
LOCHWAANGIAMATAK 120 kWp (120 kW AC) SOLAR MINI-GRID							
A1	SPV Modules & Inverters						
1	120 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	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 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	82 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			Lot	1		

	required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.						
	LOCHWAANGIAMATAK 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	247		
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	247		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	23		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	139		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	127		
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	120		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)			M	6600		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	268.8		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	224		
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.	224		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	224		

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	224		
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	1		
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	29		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	1.72		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	7		
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	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, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
	LOCHWAANGIAMATAK 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		
	LOCHWAANGIAMATAK 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)
LORENGIPPI 75 kWp (75 kW 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	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	188 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	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	Security equipment including CCTV cameras, IR sensors with video display at control room.			Lot	1		
11	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
12	Auxiliary power supply as per specifications			Lot	1		
13	Air conditioners for the control room as per specifications.			Lot	1		

14	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		
LORENGIPPI SUBTOTAL A							
B	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
15	10M LV Concrete Pole (TSP/03/005-1)			No	129		
16	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	129		
17	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	9		
18	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	115		
19	LV Concrete stays- (Stay wire, stay block, stay rod)			No	98		
20	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	2		
B2	Other PDN Items						
21	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	150		
22	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	7920		
23	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	322.8		
24	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	269		

25	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)			No.	269		
26	Ready Boards complete with mounting accessories (TSP/14/051)			No.	269		
27	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	269		
28	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						
29	12M MV Concrete Pole (TSP/03/005-1)			No	55		
30	14M MV Concrete Pole (TSP/03/005-1)			No	11		
31	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	66		
32	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	5.75		
33	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	33		
34	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	5		
35	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	0		
B4	11KV Distribution Transformer						
36	11KV 50KVA transformer			No	2		
37	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, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
	LORENGIPPI 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		
	LORENGIPPI 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)
LOMUNYENAKWAN 120 kWp (120kW AC) SOLAR PV MINI-GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	120 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	120 kW (a.c.) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 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	82 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			Lot	1		

	required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.						
	LOMUNYENAKWAN 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	205		
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	205		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	12		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	100		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	108		
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	5280		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	211.2		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	176		
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.	176		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	176		

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	176		
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		
	LOMUNYENAKWAN 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		
	LOMUNYENAKWAN 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)
NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID							
A	Solar Power Generation Plant (SPGP)						
A1	SPV Modules & Inverters						
1	120 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	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 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	82 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		
NAMUKUSE 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	248		
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	248		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	13.45		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	22		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	207		
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)			No	0		
B2	Other PDN Items						
20	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	60		
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	7920		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	319.2		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	266		
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3),			No.	266		

	(TSP/04/011), (TSP/03/003), (TSP/02/003-1)						
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	266		
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	266		
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	19		
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	23		
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	1.42		
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	14		
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	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, busbars, 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, autorecloser, mounting structures for the HT neutral bushing 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.			Set	1		
	NAMUKUSE 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		
	NAMUKUSE 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)
NAPOSIMORU 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,			Lot	1		

	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.						
	NAPOSIMORU 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	278		
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	278		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)			Km	13.79		
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)			No	156		
18	LV Concrete stays- (Stay wire, stay block, stay rod)			No	128		
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	60		
21	Service Cable (16mm ² PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			M	7260		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			M	292.8		
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	244		
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.	244		
25	Ready Boards complete with mounting accessories (TSP/14/051)			No.	244		

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	244		
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		
	NAPOSIMORU 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		
	NAPOSIMORU 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 2 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	6		
2	Design of Battery Energy Storage System, including Inverter/Charger	Lot	6		
3	SCADA system design	Lot	6		
4	Diesel Generator Design	Lot	6		
5	Design of other SPGP items	Lot	6		
6	Survey and Design of Power Distribution Network	Lot	6		
7	Design of other PDN items	Lot	6		
8	Design of Civil/Structural works and associated works	Lot	6		
	Lot 2 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	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
KALOKOL 450 kWp (450kW 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				
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		
	KALOKOL 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	670		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	48		
9	PME installation	No	500		
10	LV Stay hole digging, making & Erection	No	580		
11	LV Strut hole digging, making & Erection	No	20		
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.	1620		
13	Installation of Ready Boards, Earthing and Testing	No.	1620		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	1620		
15	Class C-2 ERC Wiring Certificates	No	1620		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	186		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	13.82		
18	MV Stay hole digging, making & Erection	No	80		
19	MV Flying Stay hole digging, making & Erection	No	15		
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	6		

B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	KALOKOL 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		
	KALOKOL SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
LOCHWAANGIAMATAK 120 kWp (120kW AC) Solar 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				
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		
	LOCHWAANGIAMATAK 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	247		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	23		
9	PME installation	No	139		
10	LV Stay hole digging, making & Erection	No	127		
11	LV Strut hole digging, making & Erection	No			
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.	224		
13	Installation of Ready Boards, Earthing and Testing	No.	224		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	224		
15	Class C-2 ERC Wiring Certificates	No	224		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	29		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	1.72		
18	MV Stay hole digging, making & Erection	No	7		
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	2		
B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	LOCHWAANGIAMATAK 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		
	LOCHWAANGIAMATAK SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
LORENGIPPI 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 Diesel Generator				
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		
	LORENGIPPI 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	129		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	9		
9	PME installation	No	115		
10	LV Stay hole digging, making & Erection	No	98		
11	LV Strut hole digging, making & Erection	No	2		
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.	269		
13	Installation of Ready Boards, Earthing and Testing	No.	269		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	269		
15	Class C-2 ERC Wiring Certificates	No	269		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	66		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	5.75		
18	MV Stay hole digging, making & Erection	No	33		
19	MV Flying Stay hole digging, making & Erection	No	5		
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		
	LORENGIPPI 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		
	LORENGIPPI SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
LOMUNYENAKWAN 120 kWp (120kW 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				
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		
	LOMUNYENAKWAN 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	205		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	12		
9	PME installation	No	100		
10	LV Stay hole digging, making & Erection	No	108		
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.	176		
13	Installation of Ready Boards, Earthing and Testing	No.	176		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	176		
15	Class C-2 ERC Wiring Certificates	No	176		
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		
	LOMUNYENAKWAN 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		
	LOMUNYENAKWAN SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
NAMUKUSE 120 kWp (120kW 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				
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		
	NAMUKUSE 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	248		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	13.45		
9	PME installation	No	22		
10	LV Stay hole digging, making & Erection	No	207		
11	LV Strut hole digging, making & Erection	No			
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.	266		
13	Installation of Ready Boards, Earthing and Testing	No.	0		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	0		
15	Class C-2 ERC Wiring Certificates	No	0		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	23		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	1.42		
18	MV Stay hole digging, making & Erection	No	14		
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	2		

B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	NAMUKUSE 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		
	NAMUKUSE SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price ¹	Total Price ¹
			(1)	(2)	(1) x (2)
NAPOSIMORU 100 kWp (100kW 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				
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		
	NAPOSIMORU 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	278		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	13.79		
9	PME installation	No	156		
10	LV Stay hole digging, making & Erection	No	128		
11	LV Strut hole digging, making & Erection	No			
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.	244		
13	Installation of Ready Boards, Earthing and Testing	No.	244		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	244		
15	Class C-2 ERC Wiring Certificates	No	244		
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		

	NAPOSIMORU 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 structururs.	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		
	NAPOSIMORU SUBTOTAL C				
D	Others				
31	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		
32	Offices facilities : Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery)	Site	6		
33	Provision of communication facilities for the employer	Lot	1		
34	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		
35	Factory Acceptance Tests for Major Items	Lumpsum	1		
36	Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land value is determined)	Fixed amount	6	KSh. 1,000,00 0	KSh. 6,000,000
	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	6				
2	Enclose/ cover/ water stockpiles of excavated soil during dry or windy conditions	Lot	6				
3	Conduct air quality measurements on a monthly basis	Lot	6				
	Solid Waste generation						
4	Provide proper facilities for holding, separating and storing waste to reduce exposure and damage by elements of weather	Lot	6				
5	Contract NEMA registered waste handlers to dispose, hazardous, obsolete and E-waste and contaminated soil	Lot	6				
6	Store hazardous products and wastes separately in well labelled containers	Lot	6				
	Noise and Vibration						
7	Conduct noise measurements on a monthly basis	Lot	6				
	Vegetation disturbance						
8	Plant and nurture (200) indigenous trees in selected areas in public/community institutions	Lot	6				
	Fire hazards						
9	Designate smoking zone, fire assembly point and provide appropriate firefighting equipment	Lot	6				
10	Provide trained fire marshals	Lot	6				
	Traffic congestion & damage to roads and other existing infrastructure						
11	Provide traffic marshals and signages	Lot	6				
	Occupational safety and Health risks						
12	Awareness creation and training of staff on occupation health and safety issues	Lot	6				
13	Provide appropriate PPEs including Helmets, Safety Boots, Overalls, Dust Coats, Ear Muffs, Safety Harness, Gloves, Safety Glasses, etc	Lot	6				
14	Provide fully stocked first aid kit	Lot	6				
15	Provide insurance to the workers as per Work Injury and Benefits Act (WIBA) requirements	Lot	6				

16	Proper barricading and hazard communication and signage	Lot	6				
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	6				
18	Install information on the site billboard - 'Beware of HIV/AIDs, it's real, it kills' and other posters around site	Lot	6				
19	Provide adequate condoms at convenient locations	Lot	6				
Risks related to spread of COVID-19 to workers and locals							
20	Install hand washing facilities with adequate running water and soap	Lot	6				
21	Use thermal guns for everyone entering the site for monitoring temperatures levels	Lot	6				
Stakeholder Engagement							
22	Conduct stakeholder engagement forums in a culturally appropriate manner	Lot	6				
23	Conduct separate adequate public consultation for the VMGs where applicable	Lot	6				
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 Price¹		Total Price¹
					Local Currency Portion	Foreign Currency Portion	
						(optional)	
	KALOKOL 450 kWp (450kW 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						
	LOCHWAANGIAMATAK 120 kWp (120 kW AC) SOLAR 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						

LORENGIPPI 75 kWp (75 kW 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							
LOMUNYENAKWAN 120 kWp (120 kW 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							
NAMUKUSE 120 kWp (120kW 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							

NAPOSIMORU 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 F							
TOTAL (to Schedule No. 7. Grand Summary)							
		Name of Bidder _____					
		Signature of Bidder _____					
/ 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.					