SCHEDULE OF RATES AND PRICES

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

	SCHEDULE NO. 1 - PLANT AND MA										
Ite	Description	Quantity and capacity	Code	Unit⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹				
m		of single unit ²	3		(1)	(2)	(1) x (2)				
	KALOKOL 450 kWp (450kW AC) SOLAR PV MINI-GRID										
Α	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 required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.		Lot	1	
		KALOKO	L SUBTOTAL	А	
В	Power Distribution Network (PDN)				
В1	3-phase and single-phase LV Distribution Line				
14	10M LV Concrete Pole (TSP/03/005-1)		No	670	
	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	
	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)		М	600	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)		М	48,000	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)		М	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	

B3 11KV MV Distribution line 28 12M MV Concrete Pole (TSP/03/005-1) 29 14M MV Concrete Pole (TSP/03/005-1) MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, Dirons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-1)
29 14M MV Concrete Pole (TSP/03/005-1) MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, Dirons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004),
MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, Dirons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004),
straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, Dirons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004),
2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)
75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)
32 MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator) No 80
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 1
36 11KV 50KVA transformer No 5
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)
B5 Step up Transformer
37 415V/11KV 315KVA transformer No 1

		KALC	KOL SUBT	OTAL	\boldsymbol{c}		
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		
С	Mandatory spares						
	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.	KALO	DKOL SUBT	·OTAL	В		
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,			Set	1		

Ite	Description	Quantity and capacity	Code	Unit⁴	Oty	CIP Unit Price ¹	CIP Total Price ¹			
m	J 3331 p 331.	of single unit ²	3		(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					
А3	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 international codes and standards at the time of installation.			Lot	1					

		LOCHWAANG	IAMATAK SUBT	OTAL A	
В	Power Distribution Network (PDN)				
В1	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 (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)		М	120	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)		М	6600	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)		М	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	IftX1ftX3/4ft 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	
В3	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	

MV Concrete Pole fittings: (Forsa arms. Tile straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, Dirons, insulators, etc.) (15/9/06/035), (15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/031, 15/9/06/0321, 15/9/06/0321, 15/9/06/0321, 15/9/06/0322] 75 Sagmm Aluminum Conductor Steel Reinard Reinar		MV/Concrete Pole fittings /Cross arms Tie					
clamps, bolts, nuts, preformed guy-grips, D- ions, insulators, etc. 1FSP/06/035), (TSP/03/021), [TSP/03/003), [TSP/02/004], (TSP/02/0021), [TSP/03/003], [TSP/02/004], (TSP/02/0021), [TSP/03/0022] Z- [TSP/02/0021], [TSP/03/0322] W/ Concrete Pole stays - [Stay wire, stay rod. stay block, shackle insulator] M/ Concrete Pole Stays - [Concrete stay block, shackle insulator] M/ Concrete Pole strut pole - [Concrete strut pole, heavy duty clamps] B4							
TSP/02/003-11, (TSP/03/004), (TSP/02/004), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/003-1), (TSP/02/001, TSP/03/022)							
IsPy03/003-1], (IsPy04/001), (ISPy02/003-2), (ISPy02/003-1), (ISPy02/002), (ISPy02/003-1), (ISPy02/003-1), (ISPy02/003-1), (ISPy02/003), (ISPy02/003-1), (ISPy02/003), (ISPy02/003-1), (ISPy02/003), (ISPy02/003-1), (ISPy02/003), (ISPy02/003	30	irons, insulators, etc) (TSP/06/035),			Sot	70	
2), [TSP/02/001], TSP/06/030-21] 7/Ssgmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase [3 - wire] line [TSP/06/020-2] 32	30				361	27	
ITSP/07/0011, ITSP/03/022 75sgmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/02-02) 22 MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator) MV Concrete Pole insulator) MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator) No 0 O O O O O O O O O							
75sgmm Aluminium Conductor Steel 31 Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2) 8							
Reinforced [ACSR] conductor for length of three phase [3 - wire] line [TSP/06/020-2] Km 1.72							
three phase (3 - wire) line (TSP/06/020-2) 32	31				Кm	1 77	
32 MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator) MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator) 34 MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) B4 11kV Distribution Transformer 35 11kV 25kVA transformer 36 11kV 25kVA transformer with structure and fittings (Earthing & Iighthing Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) 86 diverters, Overhead fuse carriers, 10M Concrete pole, 11kV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements) 87 Step up Transformer 37 415V/11kV-50kVA transformer 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, unonting structures for the surge diverters, unonting structures for the surge diverters, unonting structures for the surge diverters, unounting structures for the surge diverters, unounting 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuse, cabling and hardware for 7 years	J1				KIII	1.72	
Stay block, shackle insulator							
MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator) MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) MV Concrete poles, 11KV StevA transformer MV So - 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) MV Step up Transformer MI 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, underground cabling, conduits, cables and cable trays, grounding electrodes, solid server, underground cabling, conduits, cables and cable trays, grounding electrodes, sightning 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of fotal sold ar Vp panel capacity, fuse, cabling and hardware for 7 years	32				No	7	
33 pole, Stay wire, stay rod, stay block, shackle insulator)		<u> </u>					
MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) B4 11KV Distribution Transformer 35 11KV 25KVA transformer 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) B5 Step up Transformer 37 415V/11KV 50KVA transformer All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, busbars, 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 Th 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. C Mandatory spares Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years	33				No	0	
## strut pole, heavy duty clamps ## 11KV Distribution Transformer ## 11KV 25KVA transformer ## 11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated earniers, 10M Concrete poles, 11KV Steet channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements) ## 15 Step up Transformer ## 18 Step up Transformer ## 19 Step up Transformer ## 19 Step up Transformer ## 19 Step up Transformer ## 10 In University of the surge diverters and the 11kv distribution transformers, including but not limited to: panelboards, busbars, switchgears, air break switch and structure, 11kv solid links, surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galwanized 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. ## 18 COCHWAANGIAMATAK SUBTOTAL B ## 18 COCHWAANGIAMAT		insulator)					
strut pole, neavy duty clamps) ### 11KV Distribution Transformer ### 11KV 5D-200KVA transformer ### 11KV 5D-200KVA transformer substation ### 11KV 5D-	34	MV Concrete Pole strut pole – (Concrete			No	0	
35 11KV 25KVA transformer 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) 85 Step up Transformer 37 415V/11KV 50KVA transformer All system components for interconnecting the inverters and the 11kv distribution transformer, 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 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years	51	strut pole, heavy duty clamps)			140	O	
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) B5 Step up Transformer 37 415V/11KV 50KVA transformer 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, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years	B4	11KV Distribution Transformer					
structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Set 2 36 diverters, Overhead fuse carriers, 10M Set 2 Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements) B5 Step up Transformer 37 415V/11KV 50KVA transformer 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years	35	11KV 25KVA transformer			No	2	
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) B5 Step up Transformer 37 415V/11KV 50KVA transformer No 1 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years							
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) B5 Step up Transformer 37 415V/11kV 50kVA transformer No 1 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years							
diverters, Overhead fuse carriers, TOM Concrete poles, 11kV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements) B5 Step up Transformer 37 415V/11kV 50kVA transformer 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. C Mandatory spares Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years							
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38 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. LOCHWAANGIAMATAK SUBTOTAL B C Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years Lot 1							
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C Mandatory spares Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years Lot 1		standards at the time of installation.	I OCH\Y/AAN	GIAMAT	VK (I Ib.	L TOTAL R	
Mandatory spares including at least 1 spare inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years Lot 1		Mandatory spares		20 WAN (1)	, 117 200		
inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years Lot 1							
fuses, cabling and hardware for 7 years	3.5					_	
	39				Lot	1	
		including all consumable parts.					
LOCHWAANGIAMATAK SUBTOTAL C			LOCHWAAN	GIAMAT	AK SUB	TOTAL C	

Ite	Description	Quantity and capacity	Code	Unit⁴	Oty	CIP Unit Price ¹	CIP Total Price ¹
m	Z.co.,p.i.c.i	of single unit ²	3	OT III	(1)	(2)	(1) x (2)
	LORENGIPPI 75 kV	Vp (75 kW AC) SOLAR	PV MIN	I GRID		
Α	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		
А3	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			Lot	1		

	international codes and standards at the time of installation.						
В	Payers Distribution Naturally (DDNI)	L	ORENGIPI	PI SUBT	OTAL A		
	Power Distribution Network (PDN) 3-phase and single-phase LV Distribution						
В1	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 Service Cable (25mm2 PVC Insulated three						
21	phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			М	150		
22	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)			М	7920		
23	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)			М	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			No	269		

	meter & MCB mounting, Service cable entry and Earthing .			
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	
В3	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, Dirons, 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	1	
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	1	
B5	Step up Transformer			
37	415V/11KV 50KVA 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		
		LO	ORENGI	PPI SUB	TOTAL B		
С	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		
		LC	ORENGI	PPI SUB	TOTAL C		

Ite	Description	Quantity and capacity	Code	Unit⁴	Qty	CIP Unit Price ¹	CIP Total Price ¹
m	<u> </u>	of single unit ²	3	O 11110	(1)	(2)	(1) x (2)
	LOMUNYENAKWAN 12	0 kWp (120k	W AC) SO	DLAR PV	/ MINI-GR	ID	
Α	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		
А3	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 autostart capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Lot	1		

		LOMUNYENAKWA	N SUB	TOTAL A	
В	Power Distribution Network (PDN)				
В1	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 (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)		М	0	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)		М	5280	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)		М	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	
В3	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, Dirons, 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								
С	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								

Ite	Description	Quantity and capacity	Code	Unit⁴	Oty	CIP Unit Price ¹	CIP Total Price ¹
m	, , , , , , , , , , , , , , , , , , , ,	of single unit ²	3		(1)	(2)	(1) x (2)
	NAMUKUSE 120 kV	Vp (120kW A	C) SOLAI	R PV MIN	VI GRID		
Α	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		
А3	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		

1 1		I	1	1		I	1	1
		<u> </u>	NAMUKU	SE SUBT	TOTAL A			
В	Power Distribution Network (PDN)							
В1	3-phase and single-phase LV Distribution							
14	Line 10M LV Concrete Pole (TSP/03/005.1)			No	248			
17	10M LV Concrete Pole (TSP/03/005-1) LV Concrete Pole fittings-			INU	270			
	(Multipurpose/universal clamps,							
	bolts, nuts, stays, preformed guy-grips, D-							
15	irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004),			Set	Set 248			
	(TSP/02/003-1), (TSP/04/011), (TSP/02/003-							
	2), (TSP/02/002), (TSP/06/036-1),							
	(TSP/07/001), (TSP/03/022)							
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							
	Service Cable (25mm2 PVC Insulated three							
20	phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication			M	60			
	Cable) (TSP/05/004)							
	Service Cable (16mm2 PVC Insulated Single							
21	Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)			М	7920			
	(TSP/05/004)							
77	10mm dropper cable Red and Black; 1m			N //	210.2			
22	each for single phase meters ² (TSP/05/016)			М	319.2			
	Service cable concrete fittings (TSP/02/004),							
23	(TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)			No.	266			
	Service Cable fittings for wall mounting							+
24	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			
3,	1ftX1ftX3/4ft metallic meter boards				244			
26	(galvanized gauge 30 plain iron sheet) with wall mounting accessories and suitable for			No	266			
	wan mounting accessories and suitable 101							

	meter & MCB mounting, Service cable entry			
	and Earthing .			
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	
В3	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, Dirons, 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	
		NA	MUKUSE SUB	TOTAL B	
С	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	
		NA	MUKUSE SUB	TOTAL C	

Ite	Description	Quantity and capacity	Code	Unit⁴	Oty	CIP Unit Price ¹	CIP Total Price ¹
m	_	of single unit ²	3		(1)	(2)	(1) x (2)
	NAPOSIMORU 100 k	Wp (100kW /	AC) SOLA	R PV M	INI GRID		
Α	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		
А3	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 autostart capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Lot	1		

	NAPOSIMORU SUBTOTAL A						
В	Power Distribution Network (PDN)						
В1	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)	М	60				
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	7260				
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)	М	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	IftX1ftX3/4ft 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				
В3	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				

		straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-						
	30	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			
			,	NAPO	DSIMORU	SUBTOTAL B		
	С	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			
				NAPO	OSIMORU	SUBTOTAL C		
j		TOTAL (to Schedule No. 7. Grand Sun	nmary)					
j			Name of Bidder					
ľ			Signature of Bidder					
ŀ	1 Spec	ify currency. Create and use as many columns f		Price as	there are	currencies.		
ŀ		er to provide further breakdown of items quote					the item as w	<i>i</i> ell
		size/capacity of a single unit.				<u>'</u>		
		ers shall enter a code representing the country						
Ī		per km - Bidders are advised to assume a span le	ength of 100m for Medi	ium Volt	age netw	ork (11kV) and	50m for Low	/
ļ		ge network. Refer to Employer's Requirements & Tachnical	Specifications for date	ails of sa	sch itam /	(Bidding Dos:	monts \/oli	
	II and	Refer to Employer's Requirements & Technical IVI	specifications for deta	מווז טו פני	acii iteiii (Bidding Docui	menus voium	.C3
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	Country of Origin Declaration Form									
lte m	Description	Code	Country							

	SCHEDULE NO. 2 - PLANT AND MANDATO	RY SPARE PA	RTS FRO	M WITH	IN THE E	MPLOYER'S CO	OUNTRY
Ite	Description	Quantity and capacity	Code 3	Unit⁴	Oty	EXW Unit Price ¹	EXW Total Price ¹
m		of single unit ²			(1)	(2)	(1) x (2)
	KALOKOL 450 kWp	(450kW AC) SOLAF	PV MIN	II-GRID		
Α	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 required for a safety, reliability, and			Lot	1		

	compliance with all relevant local and international codes and standards at the time of installation.				
		KALOK	(OL SUBTOTAL	. A	
В	Power Distribution Network (PDN)				
В1	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)		М	600	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)		М	48,000	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)		М	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		No	1620	

	meter & MCB mounting, Service cable entry and Earthing			
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	
В3	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, Dirons, 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	1	
36	11KV 50KVA transformer	No	5	
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	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		S	Set	1	
	relevant local and international codes and standards at the time of installation.					
		KALO	KOL SUBTO	OTAL	В	
С	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.		L	.ot	1	
		KALO	KOL SUBTO	OTAL	C	

Ite	Description	Quantity and capacity	Code	Unit⁴	Oty	EXW Unit Price ¹	EXW Total Price ¹
m	Description	of single unit ²	3	Or int	(1)	(2)	(1) x (2)
	LOCHWAANGIAMATAK	120 kWp (12	20 kW A	C) SOLA	R MINI-G	RID	
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		
А3	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 autostart capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.	OCL DV/A AAA		Lot	1		
	L	OCHWAAN	GIAMAT.	AK SUBT	OTAL A		
В	Power Distribution Network (PDN)						

В1	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 (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	120	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)(TSP/05/004)	М	6600	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)	М	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, Dirons, 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 25KVA 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 50KVA 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	
		OCHWAANG	JAMATA	K SUBT	OTALB	
С	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	
	L	OCHWAANG	IAMATA	K SUBT	OTAL C	

Ite	Description	Quantity and capacity	Code	Unit⁴	Oty	EXW Unit Price ¹	EXW Total Price ¹
m	2 333 (of single unit ²	3		(1)	(2)	(1) x (2)
	LORENGIPPI 75 kW	p (75 kW AC) SOLAF	R PV MIN	NI GRID		
Α	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		
А3	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 autostart 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 SUB	TOTAL A]	
В	Power Distribution Network (PDN)				
В1	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)	М	150		
22	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	7920		
23	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)	М	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		
В3	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		

75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2) 33 MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator) MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator) 35 MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) B4 11KV Distribution Transformer 36 11KV 50KVA transformer 11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning)	
stay block, shackle insulator) MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator) MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) No 11KV Distribution Transformer No 11KV 50KVA transformer substation	
34 pole, Stay wire, stay rod, stay block, shackle insulator) 35 MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) B4 11KV Distribution Transformer 36 11KV 50KVA transformer 11KV 50 - 200KVA transformer substation	
strut pole, heavy duty clamps) B4 11KV Distribution Transformer 36 11KV 50KVA transformer No 1 11KV 50 - 200KVA transformer substation	
36 11KV 50KVA transformer No 1 11KV 50 - 200KVA transformer substation	
11KV 50 - 200KVA transformer substation	
Protection and associated material requirement, Expulsion Fuses, Surge 37 diverters, Overhead fuse carriers, 10M Set 1 Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements)	
B5 Step up Transformer	
37 415V/11KV 50KVA transformer No 1	
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. LORENGIPPI SUBTOTAL B	
C Mandatory spares	
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.	

lte	Description	Quantity and	Code	Unit⁴	Oty	EXW Unit Price ¹	EXW Total Price ¹
m	Description	capacity of single unit ²	3	Onit.	(1)	(2)	(1) × (2)
	LOMUNYENAKWAN 120) kWp (120k	W AC) S	OLAR P	√ MINI-GI	RID	
Α	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		
А3	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 autostart capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Lot	1		
		LOMUNY	ENAKW	AN SUBT	TOTAL A		

В	Power Distribution Network (PDN)			
В1	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 (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	0	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	5280	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)	М	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	
В3	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, Dirons, 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	
		LOMUNYE	NAKWA	AN SUB	TOTAL B	
С	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			Lot	1	
37	including all consumable parts.					

lte	Description	Quantity and capacity	Code	Unit⁴	Oty	EXW Unit Price ¹	EXW Total Price ¹
m	2001.pas.:	of single unit ²	3	3 1 3	(1)	(2)	(1) x (2)
	NAMUKUSE 120 kW	p (120kW A	C) SOLA	R PV MI	NI GRID		
Α	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			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		
		N	AMUKU	ISE SUBT	TOTAL A		

В	Power Distribution Network (PDN)			
В1	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)	М	60	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	7920	
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)	М	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	
В3	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	

22, (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/07/00	30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, Dirons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-		Set	23	
three phase (3 - wire) line (TSP/06/020-2) 32 MV Concrete Pole stays - (Stay wire, stay rod. stay block, shackle insulator) 33 pole, Shay wire, stay rod, stay block, shackle insulator) 34 MV Concrete Pole flying stays - (Concrete pissulator) 35 MV Concrete Pole strut pole - (Concrete strut pole - (Concrete strut pole, heavy duty clamps) 36 MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) 37 HIKV 50KVA transformer 38 No 2 38 IIKV 50KVA transformer 39 No 2 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 Seel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anti-climbing devices and other safety requirements) 38 Step up Transformer 39 415V/11KV 100KVA transformer All system components for interconnecting the inverters and the 11kv distribution transformers, including but not limited to: panelboards, bushars, 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 electrodes, grounding electrodes, 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. NAMUKUSE SUBTOTAL B C Mandatory spares including at least 1 spare including all consumable parts.	21	2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022) 75sqmm Aluminium Conductor Steel		Km	1 /17	
stay block, shackle insulator] 33 MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator) 34 MV Concrete Pole strut pole - (Concrete strut pole, heavy duty clamps) 35 11kV Distribution Transformer	31			KIII	1.42	
pole, Stay wire, stay rod, stay block, shackle insulator MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps) MV SolkVA transformer	32			No	14	
Strut pole, heavy duty clamps) 84 11KV Distribution Transformer 11KV 50-200KVA transformer 11KV 50-200KVA transformer	33	pole, Stay wire, stay rod, stay block, shackle		No	0	
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) Step up Transformer 37 415V/11KV 100KVA transformer All system components for interconnecting the inverters and the 11kv solid links, 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. NAMUKUSE SUBTOTAL B Mandatory spares 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.	34	• •		No	0	
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) 85 Step up Transformer 37 415V/11kV 100kVA transformer All system components for interconnecting the inverters and the 11kv distribution transformers, including but not limited to: panelboards, busbars, switchgaers, air break switch and structure, 11kv solid links, 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. NAMUKUSE SUBTOTAL B C Mandatory spares 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.	B4	11KV Distribution Transformer				
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) B5 Step up Transformer 37 415V/11KV 100KVA transformer 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, 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. NAMUKUSE SUBTOTAL B C Mandatory spares 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.	35	11KV 50KVA transformer		No	2	
Step up Transformer	36	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		Set	2	
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. NAMUKUSE SUBTOTAL B C Mandatory spares Mandatory spares Mandatory spares Lot 1	B5	Step up Transformer				
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. NAMUKUSE SUBTOTAL B C Mandatory spares Mandatory spares 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.	37	415V/11KV 100KVA transformer		No	1	
C Mandatory spares 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	38	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			·	
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			NAM	IUKUSE SUBT	OTAL B	
inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.	С					
NAMUKUSE SUBTOTAL C	39	inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years		Lot	1	
			NAM	1UKUSE SUBT	OTAL C	

Ite	Description	Quantity and capacity Cod	Code 3	Unit⁴	Oty	EXW Unit Price ¹	EXW Total Price ¹
m	Description	of single unit ²	3	Offic	(1)	(2)	(1) x (2)
	NAPOSIMORU 100 KV	Wp (100kW /	AC) SOL	AR PV N	IINI GRID		
Α	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		
А3	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			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		
				NAPC	SIMORU	SUBTOTAL A	

В	Power Distribution Network (PDN)				
В1	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)	Sei	: 278		
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)	Kn	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)	М	7260		
22	10mm dropper cable Red and Black; 1m each for single phase meters ² (TSP/05/016)	М	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	Lo	t 1		
В3	11KV MV Distribution line			1	
28	12M MV Concrete Pole (TSP/03/005-1)	No			
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, Dirons, 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/02/001), (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			
				NAPC	DSIMORU	SUBTOTAL B		
С	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			
				NAPC	SIMORU	SUBTOTAL C		
	TOTAL (to Schedule No. 7. Grand Sum	mary)						
	-	Name of	Bidder					
		Signature of						
1 Spec	cify currency. Create and use as many columns f			ıl Price a	s there ar	e currencies.		
	ler to provide further breakdown of items quote						p the item as	
	well as the city/capacity of a single unit							

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

 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

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.

	SCHEDULE NO. 3 - SURVEY &	ERVICES			
	LOT 2 SOLAR PV MINIGRIDS				
lte m	Description		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 Su				
	Name 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, COMM	MISSION	ING AND	OTHER SERVICES	
lte m	Description	Unit	Qty	Unit Price 1	Total Price 1
•••			(1)	(2)	(1) x (2)
	KALOKOL 450 kWp (450kW AC) SC	LAR PV	MINI GRI	D	
Α	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		
	KALOK	(OL SUB	TOTAL A		
В	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		
	KALOK	OL SUB	TOTAL B		
С	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				

lte m	Description	Unit	Oty	Unit Price 1	Total Price ¹
			(1)	(2)	(1) x (2)
	LOCHWAANGIAMATAK 120 kWp (120	kW AC)	Solar Mini	Grid	
Α	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		
	LOCHWAANGIAMAT	AK SUB	TOTAL A		
В	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		
	LOCHWAANGIAMAT	AK SUB	TOTAL B		
С	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				

lte m	Description	Unit	Qty	Unit Price 1	Total Price ¹
•••			(1)	(2)	(1) x (2)
	LORENGIPPI 75 kWp (75 kW AC) SC	DLAR PV	MINI GRI)	Ī
Α	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		
	LORENGI	PPI SUB	TOTAL A		
В	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	1		

B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	LORENGI	PPI SUB	TOTAL B		
С	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				

LOMUNYENAKWAN 120 KWp (120kW AC) SOLAR PV MINI GRID A Solar Power Generation Plant (SPGP) Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger Installation, Erection, Testing and Commissioning of SCADA system Installation, Erection, Testing and Commissioning Diesel Generator Installation, Erection, Testing and Commissioning Diesel Generator Installation of all balance of system components to complete erection of the SPGP 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 LOMUNYENAKWAN SUBTOTAL A B Power Distribution Network B-1 Phase lines and Single phase lines 7 Pole Erection, dressing and stringing of LV lines-3 phase lines and Single phase in Service Conductor Stringing including trace clearance as per KPLC Km 12 9 PME installation 10 LV Stay hole digging, making & Erection No 108 11 LV Strut hole digging, making & Erection No 108 12 Service cable installation complete with terminations on both the the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation 13 Installation of Ready Boards, Earthing and Testing 14 Installation of Ready Boards, Earthing and Testing 15 Class C-2 ERC Wining Cerufficates No 176 Pole Erection and dressing-Concrete No 0 176 Pole Erection and dressing-Concrete No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging making & Erection No 0 MV Strut hole digging mak	lte m	Description	Unit	Qty	Unit Price 1	Total Price ¹
A Solar Power Generation Plant (SPGP)						(1) x (2)
Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures Lot 1			(C) SOLA	R PV MIN	I GRID	T
Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger Lot	Α					
Installation, Erection, Testing and Commissioning of SCADA Lot 1	1		Lot	1		
Installation, Erection, Testing and Commissioning Diesel Generator Installation of all balance of system components to complete erection of the SPGP Installation of all balance of system components to complete erection of the SPGP Installation 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 L	2		Lot	1		
Separator Installation of all balance of system components to complete erection of the SPGP 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	3	,	Lot	1		
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 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 8 Conductor Stringing including trace clearance as per KPLC standard 9 PME installation No 100 LV Stay hole digging, making & Erection No 21 B-2 Service cable 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 13 Installation of Ready Boards, Earthing and Testing No. 176 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination 14 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination 15 Class C-2 ERC Wrining Certificates Pegging, Erection, dressing and stringing of 11KV MV Distribution line 16 Pole Erection and dressing- Concrete No 0 Conductor Stringing including trace clearance as per KPLC Km 0 W Stay hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	4					
DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance contract Conductor Stringing Including trace clearance as per KPLC standard model installation of the yold model metallic customer meter boards repaid metallic customer meter boards complete with MCB and service cable termination No. 176	5		Lot	1		
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	6	DG. Test running of Solar Power Plant as well as load trials at site, prior to handover and implementation of maintenance	Lot	1		
Pegging, Erection, dressing and stringing of LV lines-3 phase lines and Single phase lines No 205		LOMUNYENAKW	'AN SUBT	TOTAL A		
phase lines and Single phase lines Pole Erection and dressing- Concrete Conductor Stringing including trace clearance as per KPLC standard PME installation LV Stay hole digging, making & Erection No LV Stay hole digging, making & Erection No LV Strut hole digging, making & Erection No Erection No To B-2 Service cable 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 Installation of Ready Boards, Earthing and Testing Installation of Ready Boards, Earthing and Testing No. Tr6 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination To Class C-2 ERC Wiring Certificates No Pegging, Erection, dressing and stringing of 11KV MV Distribution line Pole Erection and dressing- Concrete No Conductor Stringing including trace clearance as per KPLC standard MV Stay hole digging, making & Erection No MV Flying Stay hole digging, making & Erection No MV Strut hole digging, making & Erection No MV Strut hole digging, making & Erection No Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	В	Power Distribution Network				
8 Conductor Stringing including trace clearance as per KPLC standard 9 PME installation 10 LV Stay hole digging, making & Erection 11 LV Strut hole digging, making & Erection 12 Service cable Service cable 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 13 Installation of Ready Boards, Earthing and Testing 14 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination 15 Class C-2 ERC Wiring Certificates 16 Pegging, Erection, dressing and stringing of 11KV MV Distribution line 17 Conductor Stringing including trace clearance as per KPLC standard 18 MV Stay hole digging, making & Erection 19 MV Flying Stay hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	B-1					
standard PME installation No 100 LV Stay hole digging, making & Erection No 108 LV Strut hole digging, making & Erection No 21 B-2 Service cable 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 Is Installation of Ready Boards, Earthing and Testing No. 176 Installation of Ready Boards, Earthing and Testing No. 176 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination Service cable installation No. 176 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination Ro. 176 Pegging, Erection, dressing and stringing of 11KV MV Distribution line Pole Erection and dressing- Concrete No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	7	Pole Erection and dressing- Concrete	No	205		
10 LV Stay hole digging, making & Erection No 108 11 LV Strut hole digging, making & Erection No 21 B-2 Service cable 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 No 0 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	8		Km	12		
11 LV Strut hole digging, making & Erection B-2 Service cable 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 13 Installation of Ready Boards, Earthing and Testing No. 176 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination No. 176 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 No 0 No 0 No 0 No 0 No 0 No 0 MV Stay hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 MV Strut hole digging, making & Erection No 0 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	9	PME installation	No	100		
B-2 Service cable 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 Installation of Ready Boards, Earthing and Testing Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination Class C-2 ERC Wiring Certificates Pegging, Erection, dressing and stringing of 11KV MV Distribution line Pole Erection and dressing- Concrete Conductor Stringing including trace clearance as per KPLC standard MV Stay hole digging, making & Erection No MV Flying Stay hole digging, making & Erection No MV Strut hole digging, making & Erection Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	10		No	108		
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 13 Installation of Ready Boards, Earthing and Testing 14 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination 15 Class C-2 ERC Wiring Certificates 16 Pegging, Erection, dressing and stringing of 11KV MV Distribution line 16 Pole Erection and dressing- Concrete 17 Conductor Stringing including trace clearance as per KPLC standard 18 MV Stay hole digging, making & Erection 19 MV Flying Stay hole digging, making & Erection 20 MV Strut hole digging, making & Erection No Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer		33 3	No	21		
the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation 13 Installation of Ready Boards, Earthing and Testing 14 Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination 15 Class C-2 ERC Wiring Certificates 16 Pegging, Erection, dressing and stringing of 11KV MV Distribution line 16 Pole Erection and dressing- Concrete 17 Conductor Stringing including trace clearance as per KPLC standard 18 MV Stay hole digging, making & Erection 19 MV Flying Stay hole digging, making & Erection 20 MV Strut hole digging, making & Erection No 0 B-4 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	B-2	Service cable				
14Installation of wall mounted metallic customer meter boards complete with MCB and service cable terminationNo.17615Class C-2 ERC Wiring CertificatesNo176B-3Pegging, Erection, dressing and stringing of 11KV MV Distribution lineNo016Pole Erection and dressing- ConcreteNo017Conductor Stringing including trace clearance as per KPLC standardKm018MV Stay hole digging, making & ErectionNo019MV Flying Stay hole digging, making & ErectionNo020MV Strut hole digging, making & ErectionNo0B-4Mounting, Dressing, Welding and Earthing 11KV 	12	the pole and angle iron on the wall, pole mounted meter box,	No.	176		
complete with MCB and service cable termination Class C-2 ERC Wiring Certificates Pegging, Erection, dressing and stringing of 11KV MV Distribution line Pole Erection and dressing- Concrete Conductor Stringing including trace clearance as per KPLC standard MV Stay hole digging, making & Erection No MV Flying Stay hole digging, making & Erection No MV Strut hole digging, making & Erection No Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	13	Installation of Ready Boards, Earthing and Testing	No.	176		
B-3 Pegging, Erection, dressing and stringing of 11KV MV Distribution line 16 Pole Erection and dressing- Concrete No Conductor Stringing including trace clearance as per KPLC standard Km MV Stay hole digging, making & Erection No MV Flying Stay hole digging, making & Erection No MV Strut hole digging, making & Erection No MV Strut hole digging, making & Erection No Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	14		No.	176		
Distribution line 16 Pole Erection and dressing- Concrete 17 Conductor Stringing including trace clearance as per KPLC standard 18 MV Stay hole digging, making & Erection 19 MV Flying Stay hole digging, making & Erection 20 MV Strut hole digging, making & Erection No B-4 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	15	Class C-2 ERC Wiring Certificates	No	176		
17 Conductor Stringing including trace clearance as per KPLC standard 18 MV Stay hole digging, making & Erection 19 MV Flying Stay hole digging, making & Erection 20 MV Strut hole digging, making & Erection No B-4 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	B-3					
17 standard	16	Pole Erection and dressing- Concrete	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	17		Km	0		
20 MV Strut hole digging, making & Erection No 0 B-4 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	18	MV Stay hole digging, making & Erection	No	0		
B-4 Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer	19		No	0		
Distribution Transformer	20	MV Strut hole digging, making & Erection	No	0		
	B-4					
21 Transformer Mounting, Dressing, Welding and Earthing No 0	21	Transformer Mounting, Dressing, Welding and Earthing	No	0		
LOMUNYENAKWAN SUBTOTAL B		LOMUNYENAKW	'AN SUB	TOTAL B		

С	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					

lte m	Description	Unit	Qty	Unit Price 1	Total Price ¹
•••			(1)	(2)	(1) x (2)
	NAMUKUSE 120 kWp (120kW AC) S	OLAR P\	/ MINI GRI	D	
Α	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		
	NAMUKU	JSE SUB	TOTAL A		
В	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	
	NAMUKU	JSE SUB	TOTAL B	
С	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	
	NAMUKU	JSE SUB	TOTAL C	

lte m	Description	Unit	Qty	Unit Price	Total Price 1
			(1)	(2)	(1) x (2)
_	NAPOSIMORU 100 kWp (100kW AC) S	OLAR PV M	INI GRID	T T	
Α	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		
		IMORU SUB	TOTAL A		
В	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		
	NAPO	SMORU SUB	TOTAL B		

С	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		
	NAPOS	SIMORU SUB	TOTAL C		
D	Others				
31	Cost allocation for end-of-life (EOL) plan for all batteries and	Lot	1		
٠.	other potentially hazardous e-waste at the end of its useful life				
32	other potentially hazardous e-waste at the end of its useful life Offices facilities: Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery)	Site	6		
	Offices facilities: Provide a furnished site office complete with communication facilities (Laptop, internet, printer and	Site Lot	6		
32	Offices facilities: Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery)		-		
32	Offices facilities: Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery) Provision of communication facilities for the employer Provision of Transport: Provide fuel and maintain with driver transport for exclusive use of the REREC project engineer for	Lot Vehicle/	1		
32 33 34	Offices facilities: Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery) Provision of communication facilities for the employer 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)	Lot Vehicle/ Months	1	KSh. 1,000,000	KSh. 6,000,000
32 33 34 35	Offices facilities: Provide a furnished site office complete with communication facilities (Laptop, internet, printer and stationery) Provision of communication facilities for the employer 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) Factory Acceptance Tests for Major Items Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land	Lot Vehicle/ Months Lumpsum Fixed amount	1 12		KSh. 6,000,000
32 33 34 35	Offices facilities: Provide a furnished site office complete with communication facilities (Laptop, internet, printer and stationery) Provision of communication facilities for the employer 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) Factory Acceptance Tests for Major Items Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land	Lot Vehicle/ Months Lumpsum Fixed amount	1 12 1 6		KSh. 6,000,000
32 33 34 35	Offices facilities: Provide a furnished site office complete with communication facilities (Laptop, internet, printer and stationery) Provision of communication facilities for the employer 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) Factory Acceptance Tests for Major Items Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land	Lot Vehicle/ Months Lumpsum Fixed amount SUBT	1 12 1 6 TOTAL D		KSh. 6,000,000
32 33 34 35	Offices facilities: Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery) Provision of communication facilities for the employer 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) Factory Acceptance Tests for Major Items Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land value is determined)	Lot Vehicle/ Months Lumpsum Fixed amount	1 12 1 6 TOTAL D		KSh. 6,000,000
32 33 34 35	Offices facilities: Provide a furnished site office complete with communication facilities(Laptop, internet, printer and stationery) Provision of communication facilities for the employer 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) Factory Acceptance Tests for Major Items Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land value is determined)	Lot Vehicle/ Months Lumpsum Fixed amount SUBT	1 12 1 6 TOTAL D		KSh. 6,000,000

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 - ENVIRONME	NTAL, S	OCIAL, F	HEALTH AND	SAFETY (ESH	IS) SERVICES	
			Qty	Unit F	Price ¹	Total	Price ¹
lte m	Description	Unit	(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 e	existing i	nfrastructure			
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 influexploitation and sexual harassment, HIV/			cts (Gender based violence)-Sexual abuse and 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 wo	rkers ar	nd locals	s			
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				
	TOI	AL (To	Schedul	ile 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 Offgrid Solar Access Project (Bidding Document Volume I)						

	SCHEDULE NO. 6 - OPERATION & MAINTENANCE						
					Unit Price ¹		
lte m	Description	Uni t	Qt y	% of O&M Contract Price	Local Currency Portion	Foreign Currency Portion	Total Price ¹
	KALOKOL 450 LWG /450LW 450 SOLAD DV/MINI C					(optional)	
	KALOKOL 450 kWp (450kW AC) SOLAR PV MINI-G	KID					
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			
			S	UBTOTAL A			
	LOCHWAANGIAMATAK 120 kWp (120 kW AC) SO	LAR MI	NI-GR	ID			
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			
		•	S	UBTOTAL B			

Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR Year 1 11.5		LORENGIPPI 75 kWp (75 kW AC) SOLAR PV MINI	GRID				
Deration and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR Year 1	1		Year	1	11.5		
Network and Plant Facility for THIRD YEAR Year 1 11.5	2		Year	1	11.5		
9 Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR 6 Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 8 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 9	3		Year	1	11.5		
Network and Plant Facility for FIFTH YEAR Year 1 18	4		Year	1	11.5		
Network and Plant Facility for SIXTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 2 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 6 Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 8 Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR 9 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 1 18 1 18 1 19 1 19 1 19 1 19 1 19 1 19 1 19 1 11.5 1 19 1 11.5 1 19 1 11.5	5		Year	1	18		
Network and Plant Facility for SEVENTH YEAR Teal 1	6		Year	1	18		
LOMUNYENAKWAN 120 kWp (120 kW AC] SOLAR PV MINI-GRID	7		Year	1	18		
1 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 2 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR 6 Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR 8 Vear 1 1/8 7 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 8 SUBTOTAL D 8 NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID 1 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 2 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 6 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 8 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 8 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 9 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR							
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Network and Plant Facility for SECOND YEAR Tedil 1 17.5	1		Year	1	11.5		
Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR 6 Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID 1 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 2 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	2		Year	1	11.5		
Network and Plant Facility for FOURTH YEAR 1	3		Year	1	11.5		
Network and Plant Facility for FIFTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR Toperation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR Network and Plant Facility for SEVENTH YEAR NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID Network and Plant Facility for FIRST YEAR Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	4		Year	1	11.5		
Network and Plant Facility for SIXTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 8 SUBTOTAL D 1 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 2 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 6 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 7 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 8 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 9 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 1 11.5	5		Year	1	18		
Network and Plant Facility for SEVENTH YEAR 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 2 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network and Maintenance Network	6		Year	1	18		
NAMUKUSE 120 kWp (120kW AC) SOLAR PV MINI GRID Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	7		Year	1	18		
1 Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR 2 Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR 3 Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution Network				SI	JBTOTAL D		
Network and Plant Facility for FIRST YEAR Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR		. ,	I GRID		Т	T	
Network and Plant Facility for SECOND YEAR Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR Operation and Maintenance of the Distribution Vear 1 18	1	Network and Plant Facility for FIRST YEAR	Year	1	11.5		
Network and Plant Facility for THIRD YEAR 4 Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR 5 Operation and Maintenance of the Distribution 7 1 11.5	2		Year	1	11.5		
Network and Plant Facility for FOURTH YEAR Solution And Maintenance of the Distribution Solution And Maintenance of the Distribution And Maintenance of the Distri	3		Year	1	11.5		
	4		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 1 18	6		Year	1	18		
7 Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR 1 18	7		Year	1	18		
SUBTOTAL E	—	1			UDTOTALE		

	NAPOSIMORU 100 kWp (100kW AC) SOLAR PV MI	NI GRIE)				
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			
			S	UBTOTAL F			
	TOTAL (to Schedule No. 7. Grand Summary)						
		dder		_			
		Signa	ture o	f Bidder		_	
	'Specify currency in accordance with specifications i	n Bid D	ata Sh	eet under ITE	3 18.1		_

	SCHEDULE NO. 7 - GRAND SUMMARY						
Itama	Description	Total Price ¹					
Item	Description	Foreign	Local				
	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	ו					
3	Total Price of Schedule No 3: Survey & Design Services						
4	Total Price of Schedule No 4 : Installation, Testing, Commissioning, and Othe Services	r					
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)						
	Name of I						
	Signature	of Bidder	f Bidder				

9	SCHEDULE NO. 8 - RECOMMENDED SPARE PARTS (NOT BE CONSIDERED FOR EVALUATION, BUT ONLY FOR INFORMATION)										
				Unit Price ¹		Total Price ¹					
				Offict fice							
Item	Description	Unit	Qty	CIF or CIP	EXW	(1) x (2) or (3)					
item	Description	Orne		(foreign parts)	(local parts)						
		, [(1)	(2)	(3)						
	Name of Bidder										
		Signatu	ıre of Bida	'er							
	'Specify currency. Create and use as many columns for	r Unit Pr	ice and To	tal Price as there	e are curren	cies.					