## LOT 1 TURKANA NORTH & WEST

	SCHEDULE NO. 1 - PLANT AND MA	NDATORY SP			LIED FRO	OM ABROAD	
Item	Description	Quantity and capacity of single unit <sup>2</sup>	Code <sup>3</sup>	Unit⁴	Qty	CIP Unit Price <sup>1</sup>	CIP Total Price <sup>1</sup> (1) x (2)
	KAIKOR 175 kWp (		OLAR PV	MINI C			
Α	Solar Power Generation Plant (SPGP)	,					
A1	SPV Modules & Inverters						
1	175 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	175 kW (AC) Solar PV Inverters			Lot	1		
4	120 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System			201	•		
5	438 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	120 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,			Lot	1		

	and compliance with all relevant local and international codes and standards at the time of installation.				
		<b>KAIKOR</b> SU	IBTOTAL A	4	
В	Power Distribution Network (PDN)				
B1	3-phase and single-phase LV Distribution Line				
14	10M LV Concrete Pole (TSP/03/005-1)		No	612	
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	612	
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)		Km	35	
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)		No	431	
18	LV Concrete stays- (Stay wire, stay block, stay rod)		No	487	
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)		No	34	
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	300	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)		М	16530	
22	10mm dropper cable Red and Black; 1m each for single phase meters <sup>2</sup> (TSP/05/016)		М	673.2	
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)		No.	561	
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.	561	
25	Ready Boards complete with mounting accessories (TSP/14/051)		No.	561	

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 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		No Lot	1	
В3	11KV MV Distribution line				
28	12M MV Concrete Pole (TSP/03/005-1)		No	89	
29	14M MV Concrete Pole (TSP/03/005-1)		No	5	
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)		Set	94	
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)	1	Km	4.83	
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)		No	21	
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)		No	4	
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)		No	7	
B4	11KV Distribution Transformer				
35	11KV 25KVA transformer		No	4	
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	4	
B5	Step up Transformer				
37	415V/11KV 200KVA transformer		No	1	

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1	
		KAIK	OR SUBT	OTAL I	3	
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	
		KAIK	OR SUBT	OTAL (	2	

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	CIP Unit Price <sup>1</sup>	CIP Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	KANAKURDIO 75 kW	p (75kW AC)	SOLAR F	V MINI	GRID		
Α	Solar Power Generation Plant (SPGP)						
<b>A</b> 1	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 Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for 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			Lot	1		

	international codes and standards at the time of installation.				
		KANAKURDIO S	UBTOTA	LA	
В	Power Distribution Network (PDN)				
B1	3-phase and single-phase LV Distribution Line				
14	10M LV Concrete Pole (TSP/03/005-1)		No	277	
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	277	
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)		Km	16	
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)		No	187	
18	LV Concrete stays - (Stay wire, stay block, stay rod)		No	172	
19	LV Concrete strut pole - (Concrete strut pole, heavy duty clamps)		No	34	
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	666 0	
22	16mm dropper cable Red and Black; 1m each for single phase meters <sup>2</sup> (TSP/O5/O16)		М	271. 2	
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)		No.	226	
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.	226	
25	Ready Boards complete with mounting accessories (TSP/14/051)		No.	226	

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  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,	No Lot	226	
D.7	bolts, Danger Plates, Name Plates, anti- climbing Barbed wire and accessories etc. on turn-key basis			
B3	11KV MV Distribution line			
28	12M MV Concrete Pole (TSP/03/005-1)	No	37	
29	14M MV Concrete Pole (TSP/03/005-1)	No	14	
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)	Set	51	
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)	Km	4.28	
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)	No	37	
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)	No	7	
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)	No	0	
B4	11KV Distribution Transformer			
35	11KV 25KVA transformer	No	0	
36	11KV 50KVA transformer	No	2	
37	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			
38	415V/11KV 100KVA transformer	No	1	

39	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation		Set	1	
		KANAKURDIO	SUBTOTA	L B	
С	Mandatory spares				
40	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	
		KANAKURDIO	SUBTOTA	L C	

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	CIP Unit Price <sup>1</sup>	CIP Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	KIBISH 120 kWp (1	20kW AC) SO	LAR PV 1	MINI GI	ND		
Α	Solar Power Generation Plant (SPGP)						
<b>A</b> 1	SPV Modules & Inverters						
1	120 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	82 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for 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,			Lot	1		

	and compliance with all relevant local and international codes and standards at the time of installation.				
		KIBISH SUBTOTAL A			
В	Power Distribution Network (PDN)			l	l
B1	3-phase and single-phase LV Distribution Line				
15	10M LV Concrete Pole (TSP/03/005-1)	No	165		
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),	Set	165		
17	(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) 50sqmm AA bare conductor for length of LV				
17	(2-wire) line (TSP/06/020-2)	Km	9		
18	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)	No	105		
19	LV Concrete stays- (Stay wire, stay block, stay rod)	No	103		
20	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)	No	0		
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	90		
22	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	666 0		
23	10mm dropper cable Red and Black; 1m each for single phase meters <sup>2</sup> (TSP/05/016)	М	270		
24	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)	No.	225		
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.	225		
26	Ready Boards complete with mounting accessories (TSP/14/051)	No.	225		
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	225		

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, anticlimbing 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	0		
30	14M MV Concrete Pole (TSP/03/005-1)		No	0		
31	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)		Set	0		
32	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)		Km	0		
33	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)		No	0		
34	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)		No	0		
35	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)		No	0		
B4	11KV Distribution Transformer					
36	11KV 50KVA transformer		No	0		
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	0		
		KIBISH SUBTO	IALB			
С	Mandatory spares					
38	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		
		KIBISH SUBTO	TAL C			
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Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	CIP Unit Price <sup>1</sup>	CIP Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	KOKURO 120kWp (1	20kW AC) SC	LAR PV	MINI G	RID		
Α	Solar Power Generation Plant (SPGP)						
<b>A</b> 1	SPV Modules & Inverters						
1	120 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	82 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items			Lot	•		
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		

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		KOKURO SUBT	OTALA			
В	Power Distribution Network (PDN)	KOKUKO SUBI	TAL A			
B1	3-phase and single-phase LV Distribution Line					
14	10M LV Concrete Pole (TSP/03/005-1)	No	137			
17	LV Concrete Pole fittings-	140	137			
	(Multipurpose/universal clamps, bolts, nuts, stays,					
	preformed guy-grips, D-irons, insulators, etc)					
15	(TSP/06/035), (TSP/03/021),	Set	137	137		
	(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)					
16	50sqmm AA bare conductor for length of LV	Vm	7			
10	(2-wire) line (TSP/06/020-2)	Km	/			
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)	No	91			
10	LV Concrete stays- (Stay wire, stay block, stay		0/			
18	rod)	No	96			
19	LV Concrete strut pole- (Concrete strut pole,	No	26			
	heavy duty clamps)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	+			
B2	Other PDN Items Service Cable (25mm2 PVC Insulated three					
	phase, 4 core Concentric Aluminium Cable					
20	Without Two Core Copper Communication	M	60			
	Cable) (TSP/05/004)					
	Service Cable (16mm2 PVC Insulated Single		770			
21	Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable)	M	738 0			
	(TSP/05/004)					
	10mm dropper cable Red and Black; 1m each		297.			
22	for single phase meters <sup>2</sup> (TSP/O5/O16)	M	6			
	Service cable concrete fittings (TSP/02/004),					
23	(TSP/02/003-1), (TSP/04/011),	No.	248			
	(TSP/03/003), (TSP/06/035)  Service Cable fittings for wall mounting including					
24	Angle Iron (TSP/02/003-3), (TSP/04/011),	No.	248			
	(TSP/03/003), (TSP/02/003-1)	140.				
25	Ready Boards complete with mounting	No.	248			
	accessories (TSP/14/051)	140.	2 10			

1	16V16V7/46 modellis moder boards (solvenised	I I	I	1 1	ı
	1ftX1ftX3/4ft metallic meter boards (galvanized				
26	gauge 30 plain iron sheet) with wall mounting	No	248		
	accessories and suitable for meter & MCB				
	mounting, Service cable entry and Earthing				
	Other Items not Mentioned above but required				
	for installation and commissioning of the single				
	and three phase Distribution line for Mini Grid				
27	and end user installation such as insulators,	Lot	1		
	binding wires, fittings including nuts, bolts,				
	Danger Plates, Name Plates, anti-climbing				
	Barbed wire and accessories etc. on turn-key				
D.7	basis				
B3	11KV MV Distribution line		0.7		
28	12M MV Concrete Pole (TSP/03/005-1)	No	23		
29	14M MV Concrete Pole (TSP/03/005-1)	No	4		
	MV Concrete Pole fittings- (Cross arms, Tie				
	straps, insulator composites, Universal clamps,				
	bolts, nuts, preformed guy-grips, D-irons,				
30	insulators, etc) (TSP/06/035), (TSP/03/021),	Set	27		
	(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)				
31	75sqmm Aluminium Conductor Steel	Km	1.82		
31	Reinforced (ACSR) conductor for length of	Kili	1.02		
	three phase (3 - wire) line (TSP/06/020-2)				
32	MV Concrete Pole stays - (Stay wire, stay rod,	No	13		
	stay block, shackle insulator)				
33	MV Concrete Pole flying stays - (Concrete pole,	No	3		
	Stay wire, stay rod, stay block, shackle insulator)	140			
34	MV Concrete Pole strut pole – (Concrete strut	No	3		
34	pole, heavy duty clamps)	l No	3		
B4	11KV Distribution Transformer				
35	11KV 50KVA transformer	No	2		
	11KV 50 - 200KVA transformer substation				
	structure and fittings (Earthing & lightning				
	Protection and associated material requirement,				
36	Expulsion Fuses, Surge diverters, Overhead fuse	Set	2		
30	carriers, 10M Concrete poles, 11KV Steel	Jet Jet			
	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	No	1		

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1	
		KOKU	RO SUBT	OTAL E	3	
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	
		KOKU	RO SUBT	OTAL (	<u> </u>	

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	CIP Unit Price <sup>1</sup>	CIP Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	OROPOI 100 kWp (1	00 kW AC) SC	DLAR PV	MINI G	RID		
Α	Solar Power Generation Plant (SPGP)						<u>,                                      </u>
<b>A</b> 1	SPV Modules & Inverters						
1	100 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	100 kW (AC) Solar PV Inverters			Lot	1		
4	60 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	250 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management system			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			No.	1		
A4	Other SPGP Items			110.	•		
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		

				1	1	
		ODODOL CITI	OTOTAL A			
В	Dower Distribution Naturals (DDN)	OROPOI SUI	SIOIAL A			
B1	Power Distribution Network (PDN)  3-phase and single-phase LV Distribution Line					
14	10M LV Concrete Pole (TSP/03/005-1)	N	o 182			
17	LV Concrete Pole fittings-	IN IN	0 102			
	(Multipurpose/universal clamps, bolts, nuts, stays,					
	preformed guy-grips, D-irons, insulators, etc)					
15	(TSP/06/035), (TSP/03/021),	Se	Set 182			
	(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)					
1./	50sqmm AA bare conductor for length of LV	· · ·	m 9			
16	(2-wire) line (TSP/06/020-2)	K	m 9			
17	Complete Earthing- Protective Multiple Earthing	N	o 125			
	(PME) (TSP/06/031-1)  LV Concrete stays- (Stay wire, stay block, stay					
18	rod)	N	o 125			
19	LV Concrete strut pole- (Concrete strut pole,	N	o 12			
	heavy duty clamps)	IN .	0 12			
B2	Other PDN Items					
	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable					
20	Without Two Core Copper Communication	N	1 60			
	Cable) (TSP/05/004)					
	Service Cable (16mm2 PVC Insulated Single					
21	Phase Concentric Aluminium Cable Without	N	1 735			
	Two Core Copper Communication Cable)		, 0			
	(TSP/05/004) 10mm dropper cable Red and Black; 1m each		296.			
22	for single phase meters <sup>2</sup> (TSP/05/016)	N	1   290.			
	Service cable concrete fittings (TSP/02/004),					
23	(TSP/02/003-1), (TSP/04/011),	No	o. 247			
	(TSP/03/003), (TSP/06/035)					
0.4	Service Cable fittings for wall mounting including		. 047			
24	Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)	No	o. 247			
	Ready Boards complete with mounting		217			
25	accessories (TSP/14/051)	No	o. 247			

	1ftX1ftX3/4ft metallic meter boards (galvanized			
26	gauge 30 plain iron sheet) with wall mounting	No	247	
	accessories and suitable for meter & MCB			
	mounting, Service cable entry and Earthing 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,			
27	binding wires, fittings including nuts, bolts,	Lot	1	
	Danger Plates, Name Plates, anti-climbing			
	Barbed wire and accessories etc. on turn-key			
	basis			
В3	11KV MV Distribution line			
28	11M MV Concrete Pole (TSP/03/005-1)	No	0	
29	12M MV Concrete Pole (TSP/03/005-1)	No	0	
	MV Concrete Pole fittings- (Cross arms, Tie			
	straps, insulator composites, Universal clamps,			
	bolts, nuts, preformed guy-grips, D-irons,			
70	insulators, etc) (TSP/06/035), (TSP/03/021),	San		
30	(TSP/03/003), (TSP/02/004), (TSP/02/003-	Set	0	
	1), (TSP/04/011), (TSP/02/003-2),			
	(TSP/02/002), (TSP/06/036-1),			
	(TSP/07/001), (TSP/03/022)			
	75sqmm Aluminium Conductor Steel			
31	Reinforced (ACSR) conductor for length of	Km	0	
	three phase (3 - wire) line (TSP/06/020-2)			
32	MV Concrete Pole stays - (Stay wire, stay rod,	No	0	
	stay block, shackle insulator)			
33	MV Concrete Pole flying stays - (Concrete pole,	No	0	
	Stay wire, stay rod, stay block, shackle insulator)		1	
34	MV Concrete Pole strut pole – (Concrete strut	No	0	
	pole, heavy duty clamps)			
B4	11KV Distribution Transformer			
35	11KV 50KVA transformer	No	0	
	11KV 50 - 200KVA transformer substation			
	structure and fittings (Earthing & lightning			
	Protection and associated material requirement,			
36	Expulsion Fuses, Surge diverters, Overhead fuse	Set	0	
	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)			
	cambing devices and other safety requirements)	OROPOI SUBT	OTAL R	
С	Mandatory spares		1776 0	
	Mandatory spares including at least 1 spare		+	
	inverter, 5% of total solar PV panel capacity,			
37	fuses, cabling and hardware for 7 years including	Lot	1	
	all consumable parts.			
	·	OROPOI SUBT	OTAL C	
L	ı			

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	CIP Unit Price <sup>1</sup>	CIP Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	NACHUKUI 120 kWp	(120kW AC) S	OLAR PV	MINI-	GRID		
Α	Solar Power Generation Plant (SPGP)						
<b>A</b> 1	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			No.	1		
12	Air conditioners for the control room as per specifications.			No.	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		

1	1	Ì	Ì	ı	İ	1 1		
		N	<b>ACHUKUI</b> SUBT	OTAL	A			
В	Power Distribution Network (PDN)							
B1	3-phase and single-phase LV Distribution Line							
14	10M LV Concrete Pole (TSP/03/005-1)		No	177				
	LV Concrete Pole fittings-		110	177				
	(Multipurpose/universal clamps, bolts, nuts, stays,							
	preformed guy-grips, D-irons, insulators, etc)							
	(TSP/06/035), (TSP/03/021),							
15	(TSP/03/003), (TSP/02/004), (TSP/02/003-		Set	177				
	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		Km	13				
10	(2-wire) line (TSP/06/020-2)		Kili	13				
17	Complete Earthing- Protective Multiple Earthing		No	158				
17	(PME) (TSP/06/031-1)		No	156				
1.0	LV Concrete stays- (Stay wire, stay block, stay		Ma	150				
18	rod)		No	158				
19	LV Concrete strut pole- (Concrete strut pole,		No	17				
1 7	heavy duty clamps)		NO	17				
B2	Other PDN Items							
	Service Cable (25mm2 PVC Insulated three							
20	phase, 4 core Concentric Aluminium Cable		м	М	M	30		
	Without Two Core Copper Communication			30				
	Cable) (TSP/05/004)							
	Service Cable (16mm2 PVC Insulated Single							
21	Phase Concentric Aluminium Cable Without		М	636				
	Two Core Copper Communication Cable)			0				
	(TSP/05/004)			055				
22	10mm dropper cable Red and Black; 1m each		M	255.				
	for single phase meters <sup>2</sup> (TSP/05/016)			6				
9.7	Service cable concrete fittings (TSP/02/004),		Na	017				
23	(TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)		No.	213				
	Service Cable fittings for wall mounting including							
24	Angle Iron (TSP/02/003-3), (TSP/04/011),		No.	213				
	(TSP/03/003), (TSP/02/003-1)		140.	213				
	Ready Boards complete with mounting							
25	accessories (TSP/14/051)		No.	213				
	1ftX1ftX3/4ft metallic meter boards (galvanized							
0.4	gauge 30 plain iron sheet) with wall mounting			017				
26	accessories and suitable for meter & MCB		No	213				
	mounting, Service cable entry and Earthing							
		I	1		1			

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	6	
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)	Set	34	
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)	Km	1.88	
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)	No	28	
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)	No	2	
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, anticlimbing devices and other safety requirements)	Set	2	
B5	Step up Transformer			
37	415V/11KV 100KVA transformer	No	1	
38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required	Set	1	

	for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation						
		Ŋ	<b>NACHUK</b>	<b>ui</b> subt	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.			Lot	1		
		Ŋ	ACHUK	ui subt	OTAL (	С	

TOTAL (to Schedule No. 7. Grand Summary)	
Name of Bidder	
Signature of Bidder	
<sup>1</sup> Specify currency. Create and use as many columns for Unit Price and Total Price a	as there are currencies.
<sup>2</sup> Bidder to provide further breakdown of items quoted for i.e. the exact number of well as the size/capacity of a single unit.	single units that make up the item as
<sup>3</sup> Bidders shall enter a code representing the country of origin of all imported plant	and equipment.
<sup>4</sup> Lot per km - Bidders are advised to assume a span length of 100m for Medium V Low Voltage network.	oltage network (11kV) and 50m for
NB — Refer to Employer's Requirements & Technical Specifications for details of early Volumes II and IV)	ich item (Bidding Documents

	Country of Origin Declaration Form							
ltem	Description	Code	Country					

9	SCHEDULE NO. 2 - PLANT AND MANDATORY	SPARE PARTS	S FROM V	VITHIN	THE EMI	PLOYER'S CC	UNTRY
Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	EXW Unit Price <sup>1</sup>	EXW Total Price <sup>1</sup> (1) x (2)
	VAIVOD 175 IAU- /1	single unit <sup>2</sup>	I AD DV	MINILOI		(2)	(1) X (2)
_	KAIKOR 175 kWp (1	/ 3KW AC) 3C	LAKPV	MINI GI	מט		
A A1	Solar Power Generation Plant (SPGP)  SPV Modules & Inverters					<u> </u>	
AI							
1	175 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	175 kW (AC) Solar PV Inverters			Lot	1		
4	120 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	438 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	120 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		

		KAIKOR SUBTOTAL	4	
В	Power Distribution Network (PDN)			
B1	3-phase and single-phase LV Distribution Line			
14	10M LV Concrete Pole (TSP/03/005-1)	No	612	
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	612	
16	50sqmm AA bare conductor for length of LV (2-wire) line (TSP/06/020-2)	Km	35	
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)	No	431	
18	LV Concrete stays- (Stay wire, stay block, stay rod)	No	487	
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)	No	34	
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	300	
21	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	16530	
22	10mm dropper cable Red and Black; 1m each for single phase meters <sup>2</sup> (TSP/05/016)	М	673.2	
23	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)	No.	561	
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.	561	
25	Ready Boards complete with mounting accessories (TSP/14/051)	No.	561	
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	561	
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  11KV MV Distribution line	Lot	1	

28	12M MV Concrete Pole (TSP/03/005-1)			No	89	
29	14M MV Concrete Pole (TSP/03/005-1)			No	5	
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)			Set	94	
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)			Km	4.83	
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)			No	21	
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)			No	4	
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)			No	7	
B4	11KV Distribution Transformer					
35	11KV 25KVA transformer			No	4	
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, anticlimbing devices and other safety requirements)			Set	4	
B5	Step up Transformer					
37	415V/11KV 200KVA transformer			No	1	
38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation	W A 1112	OB CLIPT	Set	1	
		KAIK	OR SUBT	OTAL I	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.			Lot	1		
		KAIK	OR SUBT	OTAL (	2		l

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	EXW Unit Price <sup>1</sup>	EXW Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	KANAKURDIO 75 kW <sub>l</sub>	(75kW AC)	SOLAR P	V MINIO	GRID		
Α	Solar Power Generation Plant (SPGP)						
<b>A</b> 1	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 Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items				-		
10	Metering system consisting of check and main meters for Import / export of energy from solar plant as per grid code			No.	1		
11	Auxiliary power supply as per specifications			Lot	1		
12	Air conditioners for the control room as per specifications.			Lot	1		
13	All balance of system components for interconnecting the battery and solar array with their inverters and the wider 415V three-phase 50 Hz AC distribution system, including but not limited to: AC & DC wiring, breakers, fuses, combiner boxes, recombiner boxes, panelboards, conduits, cables and cable trays, relays, transformers, enclosures, foundations, trenches, poles, support structures, cabinets, grounding electrodes, grounding conductors, lighting arrestors, lightning rods, insulators, surge protection, meters, sensors, and any other fixtures required for a safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation.			Lot	1		

	1			1	1
		KANAKURDIO SUBTO	OTAL A		
В	Power Distribution Network (PDN)			•	
B1	3-phase and single-phase LV Distribution Line				
14	10M LV Concrete Pole (TSP/03/005-1)	N	o 277		
	LV Concrete Pole fittings-				
	(Multipurpose/universal clamps, bolts, nuts, stays, preformed guy-grips, D-irons,				
	insulators, etc) (TSP/06/035), (TSP/03/021),				
15	(TSP/03/003), (TSP/02/004), (TSP/02/003-	Se	t 277		
	1), (TSP/04/011), (TSP/02/003-2),				
	(TSP/02/002), (TSP/06/036-1),				
	(TSP/07/001), (TSP/03/022)  50sqmm AA bare conductor for length of LV				
16	(2-wire) line (TSP/06/020-2)	K	m 16		
17	Complete Earthing- Protective Multiple Earthing	N	o 187		
- 17	(PME) (TSP/06/031-1)	- ' '	107		
18	LV Concrete stays - (Stay wire, stay block, stay rod)	N	0 172		
19	LV Concrete strut pole - (Concrete strut pole,	N	o 34		
	heavy duty clamps)	N	0 34		
B2	Other PDN Items				
	Service Cable (25mm2 PVC Insulated three phase, 4 core Concentric Aluminium Cable				
20	Without Two Core Copper Communication	M	1 120		
	Cable) (TSP/05/004)				
	Service Cable (16mm2 PVC Insulated Single				
21	Phase Concentric Aluminium Cable Without	M	6660		
	Two Core Copper Communication Cable) (TSP/05/004)				
	16mm dropper cable Red and Black; 1m each				
22	for single phase meters <sup>2</sup> (TSP/05/016)	M	271.2		
	Service cable concrete fittings (TSP/02/004),				
23	(TSP/02/003-1), (TSP/04/011),	No.	226		
	(TSP/03/003), (TSP/06/035)				
24	Service Cable fittings for wall mounting including Angle Iron (TSP/02/003-3), (TSP/04/011), No.	No. 226			
	(TSP/03/003), (TSP/02/003-1)				
25	Ready Boards complete with mounting	No	226		
23	accessories (TSP/14/051)	140	. 220		

ı	16V16V7/46	1 1	İ	1 1	ı
	1ftX1ftX3/4ft metallic meter boards (galvanized				
26	gauge 30 plain iron sheet) with wall mounting	No	226		
	accessories and suitable for meter & MCB				
	mounting, Service cable entry and Earthing				
	Other Items not Mentioned above but required				
	for installation and commissioning of the single				
	and three phase Distribution line for Mini Grid				
27	and end user installation such as insulators,	Lot	1		
	binding wires, fittings including nuts, bolts,				
	Danger Plates, Name Plates, anti-climbing				
	Barbed wire and accessories etc. on turn-key basis				
B3	11KV MV Distribution line				
28	12M MV Concrete Pole (TSP/03/005-1)	No	37		
29	14M MV Concrete Pole (TSP/03/005-1)	No	14		
	MV Concrete Pole fittings- (Cross arms, Tie	NO	11		
	straps, insulator composites, Universal clamps,				
	bolts, nuts, preformed guy-grips, D-irons,				
	insulators, etc) (TSP/06/035), (TSP/03/021),				
30	(TSP/03/003), (TSP/02/004), (TSP/02/003-	Set	51		
	1), (TSP/04/011), (TSP/02/003-2),				
	(TSP/02/002), (TSP/06/036-1),				
	(TSP/07/001), (TSP/03/022)				
	75sqmm Aluminium Conductor Steel				
31	Reinforced (ACSR) conductor for length of	Km	4.28		
	three phase (3 - wire) line (TSP/06/020-2)				
32	MV Concrete Pole stays - (Stay wire, stay rod,	No	37		
32	stay block, shackle insulator)	110	37		
33	MV Concrete Pole flying stays - (Concrete pole,	No	7		
33	Stay wire, stay rod, stay block, shackle insulator)	140	,		
34	MV Concrete Pole strut pole – (Concrete strut	No	0		
34	pole, heavy duty clamps)	NO	U		
B4	11KV Distribution Transformer				
35	11KV 25KVA transformer	No	0		
36	11KV 50KVA transformer	No	2		
	11KV 50 - 200KVA transformer substation				
	structure and fittings (Earthing & lightning				
	Protection and associated material requirement,				
37	Expulsion Fuses, Surge diverters, Overhead fuse	Set	2		
	carriers, 10M Concrete poles, 11KV Steel				
	channel and clamps etc. Danger plates, phase				
	plates, circuit plates, number plates, anti-				
DF	climbing devices and other safety requirements)				
B5	Step up Transformer		1		
38	415V/11KV 100KVA transformer	No	1	]	

39 C	panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation	KANAKU	Set	1 AL B	
	Mandatory spares including at least 1 spare				
40	inverter, 5% of total solar PV panel capacity, fuses, cabling and hardware for 7 years including all consumable parts.	KANAUI	Lot	1	

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	EXW Unit Price <sup>1</sup>	EXW Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	KIBISH 120 kWp (12		AR PV M	IINI GR	ID		
Α	Solar Power Generation Plant (SPGP)	-					
<b>A</b> 1	SPV Modules & Inverters						
1	120 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	82 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items						
10	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.			
		KIBISH SUBTOTAL A		
В	Power Distribution Network (PDN)			
B1	3-phase and single-phase LV Distribution Line			
15	10M LV Concrete Pole (TSP/03/005-1)	No	165	
16	LV Concrete Pole fittings- (Multipurpose/universal clamps, bolts, nuts,s tays, 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	165	
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	105	
19	LV Concrete stays- (Stay wire, stay block, stay rod)	No	103	
20	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)	No	0	
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	90	
22	Service Cable (16mm2 PVC Insulated Single Phase Concentric Aluminium Cable Without Two Core Copper Communication Cable) (TSP/05/004)	М	6660	
23	10mm dropper cable Red and Black; 1m each for single phase meters <sup>2</sup> (TSP/05/016)	М	270	
24	Service cable concrete fittings (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)	No.	225	
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.	225	
26	Ready Boards complete with mounting accessories (TSP/14/051)	No.	225	

	1ftX1ftX3/4ft metallic meter boards (galvanized			
27	gauge 30 plain iron sheet) with wall mounting	No	225	
21	accessories and suitable for meter & MCB	No	LLJ	
	mounting, Service cable entry and Earthing			
	Other Items not Mentioned above but required			
	for installation and commissioning of the single			
	and three phase Distribution line for Mini Grid			
28	and end user installation such as insulators, binding wires, fittings including nuts, bolts,	Lot	1	
	Danger Plates, Name Plates, anti-climbing			
	Barbed wire and accessories etc. on turn-key			
	basis			
В3	11KV MV Distribution line			
29	12M MV Concrete Pole (TSP/03/005-1)	No	0	
30	14M MV Concrete Pole (TSP/03/005-1)	No	0	
	MV Concrete Pole fittings- (Cross arms, Tie		_	
	straps, insulator composites, Universal clamps,			
	bolts, nuts, preformed guy-grips, D-irons,			
31	insulators, etc) (TSP/06/035), (TSP/03/021),	Set	0	
	(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)			
	75sqmm Aluminium Conductor Steel			
32	Reinforced (ACSR) conductor for length of	Km	0	
32	three phase (3 - wire) line (TSP/06/020-2)			
7.7	MV Concrete Pole stays - (Stay wire, stay rod,		_	
33	stay block, shackle insulator)	No	0	
7.4	MV Concrete Pole flying stays - (Concrete pole,	N.	_	
34	Stay wire, stay rod, stay block, shackle insulator)	No	0	
35	MV Concrete Pole strut pole – (Concrete strut	No	0	
33	pole, heavy duty clamps)	No	0	
B4	11KV Distribution Transformer			
36	11KV 50KVA transformer	No	0	
	11KV 50 - 200KVA transformer substation			
	structure and fittings (Earthing & lightning			
	Protection and associated material requirement,			
37	Expulsion Fuses, Surge diverters, Overhead fuse	Set	0	
	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)			
	9 -4	KIBISH SUBTOTAL B		
С	Mandatory spares			
	Mandatory spares including at least 1 spare			
38	inverter, 5% of total solar PV panel capacity,	Lot	1	
70	fuses, cabling and hardware for 7 years including		'	
	all consumable parts.			
		KIBISH SUBTOTAL C	I	

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	EXW Unit Price <sup>1</sup>	EXW Total Price <sup>1</sup>
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)
	KOKURO 120kWp (1		LAR PV	MINI G	RID		
Α	Solar Power Generation Plant (SPGP)						
<b>A</b> 1	SPV Modules & Inverters						
1	120 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1		
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1		
3	120 kW (AC) Solar PV Inverters			Lot	1		
4	82 kW Battery Inverter			Lot	1		
A2	Battery Energy Storage System						
5	300 kWh Usable Battery Energy Storage System (BESS)			Lot	1		
6	Battery Management System			Lot	1		
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1		
A3	Diesel Generator						
8	82 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with shunt-trip breakers for auto-start capability			Lot	1		
9	2000Litres Fuel Storage Tank			Lot	1		
A4	Other SPGP Items			Lot	•		
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		

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		KOKU	KOKURO SUBTOTAL A				
В	Power Distribution Network (PDN)						
B1	3-phase and single-phase LV Distribution Line						
14	10M LV Concrete Pole (TSP/03/005-1)		No	137			
	LV Concrete Pole fittings-						
	(Multipurpose/universal clamps, bolts, nuts, stays, preformed guy-grips, D-irons, insulators, etc)			137			
1.5	(TSP/06/035), (TSP/03/021),		C - 4				
15	(TSP/03/003), (TSP/02/004), (TSP/02/003-		Set				
	1), (TSP/04/011), (TSP/02/003-2),						
	(TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)						
	50sqmm AA bare conductor for length of LV						
16	(2-wire) line (TSP/06/020-2)		Km	7			
17	Complete Earthing- Protective Multiple Earthing (PME) (TSP/06/031-1)		No	91			
18	LV Concrete stays- (Stay wire, stay block, stay rod)		No	96			
	LV Concrete strut pole- (Concrete strut pole,						
19	heavy duty clamps)		No	26			
B2	Other PDN Items						
	Service Cable (25mm2 PVC Insulated three			60			
20	phase, 4 core Concentric Aluminium Cable Without Two Core Copper Communication		М				
	Cable) (TSP/05/004)						
	Service Cable (16mm2 PVC Insulated Single						
21	Phase Concentric Aluminium Cable Without		М	7380			
	Two Core Copper Communication Cable)		••				
	(TSP/05/004)						
22	10mm dropper cable Red and Black; 1m each for single phase meters <sup>2</sup> (TSP/05/016)		M	297.6			
	Service cable concrete fittings (TSP/02/004),						
23	(TSP/02/003-1), (TSP/04/011),		No.	248			
	(TSP/03/003), (TSP/06/035)						
24	Service Cable fittings for wall mounting including		No.	248			
24	Angle Iron (TSP/02/003-3), (TSP/04/011), (TSP/03/003), (TSP/02/003-1)						
25	Ready Boards complete with mounting		Ma	240			
۷۵	accessories (TSP/14/051)		No.	248			

I	16V16V7/A6t matellia mater haards (schools a			I	 
26	1ftX1ftX3/4ft metallic meter boards (galvanized				
	gauge 30 plain iron sheet) with wall mounting	No	248		
	accessories and suitable for meter & MCB				
	mounting, Service cable entry and Earthing				
27	Other Items not Mentioned above but required				
	for installation and commissioning of the single		1		
	and three phase Distribution line for Mini Grid				
	and end user installation such as insulators,	Lot			
	binding wires, fittings including nuts, bolts,				
	Danger Plates, Name Plates, anti-climbing				
	Barbed wire and accessories etc. on turn-key				
	basis				
В3	11KV MV Distribution line				
28	12M MV Concrete Pole (TSP/03/005-1)	No	23		
29	14M MV Concrete Pole (TSP/03/005-1)	No	4		
	MV Concrete Pole fittings- (Cross arms, Tie				
	straps, insulator composites, Universal clamps,		27		
30	bolts, nuts, preformed guy-grips, D-irons,				
	insulators, etc) (TSP/06/035), (TSP/03/021),	Set			
	(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)				
31	75sqmm Aluminium Conductor Steel				
	Reinforced (ACSR) conductor for length of	Km	1.82		
	three phase (3 - wire) line (TSP/06/020-2)				
32	MV Concrete Pole stays - (Stay wire, stay rod,	No	13		
32	stay block, shackle insulator)	1.0	1.5		
33	MV Concrete Pole flying stays - (Concrete pole,	No	3		
	Stay wire, stay rod, stay block, shackle insulator)	INO	3		
34	MV Concrete Pole strut pole – (Concrete strut		_		
	pole, heavy duty clamps)	No	3		
B4	11KV Distribution Transformer				
35	11KV 50KVA transformer	No	2		
	11KV 50 - 200KVA transformer substation				
36	structure and fittings (Earthing & lightning				
	Protection and associated material requirement,		2		
	Expulsion Fuses, Surge diverters, Overhead fuse	6			
	carriers, 10M Concrete poles, 11KV Steel	Set			
	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	No	1		
	1	1 1			

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1	
		KOKU	IRO SUBTO	)TAL	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.			Lot	1	
		KOKU	<b>IRO</b> SUBTO	TAL (	<u> </u>	

Item	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	EXW Unit Price <sup>1</sup>	EXW Total Price <sup>1</sup>	
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)	
	OROPOI 100 kWp (100 kW AC) SOLAR PV MINI GRID							
Α	Solar Power Generation Plant (SPGP)	-						
<b>A</b> 1	SPV Modules & Inverters							
1	100 kWp (DC) Standard monocrystalline silicon SPV modules			Lot	1			
2	Fixed-tilt racking structure(s) for above SPV modules including all necessary nuts and bolts as well as necessary clamps, foundation bolts etc.			Lot	1			
3	100 kW (AC) Solar PV Inverters			Lot	1			
4	60 kW Battery Inverter			Lot	1			
A2	Battery Energy Storage System							
5	250 kWh Usable Battery Energy Storage System (BESS)			Lot	1			
6	Battery Management system			Lot	1			
7	Supply of SCADA along with associated equipment, data acquisition, data logger and display units and Industrial type PC with remote monitoring.			Lot	1			
A3	Diesel Generator							
8	60 kVA Prime Rated Diesel Generator(s) (DG) 415 V, 3-phase installed with a common genset controller capable of parallel operation with			Lot	1			
9	shunt-trip breakers for auto-start capability 2000Litres Fuel Storage Tank			No.	1			
A4	Other SPGP Items			140.				
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			

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		0	ROPOI SUBTO	TAL A		
В	Power Distribution Network (PDN)				 	
B1	3-phase and single-phase LV Distribution Line					
14	10M LV Concrete Pole (TSP/03/005-1)		No	182		
	LV Concrete Pole fittings-					
	(Multipurpose/universal clamps, bolts, nuts, stays,					
	preformed guy-grips, D-irons, insulators, etc)					
15	(TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-	182				
	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		Km	9		
10	(2-wire) line (TSP/06/020-2)		Kill	,		
17	Complete Earthing- Protective Multiple Earthing		No	125		
	(PME) (TSP/06/031-1)  LV Concrete stays- (Stay wire, stay block, stay					
18	rod)		No	125		
10	LV Concrete strut pole- (Concrete strut pole,		<b>N</b> I -	1.0		
19	heavy duty clamps)		No	12		
B2	Other PDN Items					
	Service Cable (25mm2 PVC Insulated three					
20	phase, 4 core Concentric Aluminium Cable		М	60		
	Without Two Core Copper Communication Cable) (TSP/05/004)					
	Service Cable (16mm2 PVC Insulated Single					
0.1	Phase Concentric Aluminium Cable Without			7750		
21	Two Core Copper Communication Cable)		M	7350		
	(TSP/05/004)					
22	10mm dropper cable Red and Black; 1m each		М	296.4		
	for single phase meters <sup>2</sup> (TSP/05/016)			270.1		
0.7	Service cable concrete fittings (TSP/02/004),			0.47		
23	(TSP/02/003-1), (TSP/04/011),		No.	247		
	(TSP/03/003), (TSP/06/035)  Service Cable fittings for wall mounting including					
24	Angle Iron (TSP/02/003-3), (TSP/04/011),		No.	247		
	(TSP/03/003), (TSP/02/003-1)		INO.			
25	Ready Boards complete with mounting		No.	247		
23	accessories (TSP/14/051)		140.	£ 17		

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	247	
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	11M MV Concrete Pole (TSP/03/005-1)	No	0	
29	12M MV Concrete Pole (TSP/03/005-1)	No	0	
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)	Set	0	
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)	Km	0	
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)	No	0	
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)	No	0	
34	MV Concrete Pole strut pole – (Concrete strut pole, heavy duty clamps)	No	0	
B4	11KV Distribution Transformer			
35	11KV 50KVA transformer	No	0	
36	11KV 50 - 200KVA transformer substation structure and fittings (Earthing & lightning Protection and associated material requirement, Expulsion Fuses, Surge diverters, Overhead fuse carriers, 10M Concrete poles, 11KV Steel channel and clamps etc. Danger plates, phase plates, circuit plates, number plates, anticlimbing devices and other safety requirements)	Set	0	
		OROPOI SUBTO	TAL 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	
		OROPOI SUBTO	TAL C	

ltem	Description	Quantity and capacity of	Code <sup>3</sup>	Unit⁴	Qty	EXW Unit Price <sup>1</sup>	EXW Total Price <sup>1</sup>	
		single unit <sup>2</sup>			(1)	(2)	(1) x (2)	
	NACHUKUI 120 kWp	(120kW AC) SOLAR PV MINI-GRID						
Α	Solar Power Generation Plant (SPGP)							
<b>A</b> 1	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			No.	1			
12	Air conditioners for the control room as per specifications.			No.	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			

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		NA CHURUH CURT	TOTAL A		
	D DIAM A NA A (DDN)	<b>NACHUKUI</b> SUBT	OTALA		
В	Power Distribution Network (PDN)			T	T
B1	3-phase and single-phase LV Distribution Line				
14	10M LV Concrete Pole (TSP/03/005-1)	No	177		
	LV Concrete Pole fittings-				
	(Multipurpose/universal clamps, bolts, nuts, stays,				
	preformed guy-grips, D-irons, insulators, etc)				
15	(TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-	Set	177		
	1), (TSP/04/011), (TSP/02/003-2),				
	(TSP/02/002), (TSP/06/036-1),				
	(TSP/07/001), (TSP/03/022)				
	50sqmm AA bare conductor for length of LV				
16	(2-wire) line (TSP/06/020-2)	Km	13		
17	Complete Earthing- Protective Multiple Earthing	No	1 50		
17	(PME) (TSP/06/031-1)	No	158		
18	LV Concrete stays- (Stay wire, stay block, stay	No	158		
	rod)				
19	LV Concrete strut pole- (Concrete strut pole, heavy duty clamps)	No	17		
B2	Other PDN Items				
DL	Service Cable (25mm2 PVC Insulated three				
	phase, 4 core Concentric Aluminium Cable		7.0		
20	Without Two Core Copper Communication	M	30		
	Cable) (TSP/05/004)				
	Service Cable (16mm2 PVC Insulated Single				
21	Phase Concentric Aluminium Cable Without	M	6360		
	Two Core Copper Communication Cable)		0500		
	(TSP/05/004)				
22	10mm dropper cable Red and Black; 1m each	M	255.6		
	for single phase meters <sup>2</sup> (TSP/05/016)				
27	Service cable concrete fittings (TSP/02/004),	N-	217		
23	(TSP/02/003-1), (TSP/04/011), (TSP/03/003), (TSP/06/035)	No.	213		
	Service Cable fittings for wall mounting including				
24	Angle Iron (TSP/02/003-3), (TSP/04/011),	No.	213		
	(TSP/03/003), (TSP/02/003-1)				
25	Ready Boards complete with mounting	No.	213		
23	accessories (TSP/14/051)	NO.	213		

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 Other Items not Mentioned above but required for installation and commissioning of the single	No	213	
27	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	6	
30	MV Concrete Pole fittings- (Cross arms, Tie straps, insulator composites, Universal clamps, bolts, nuts, preformed guy-grips, D-irons, insulators, etc) (TSP/06/035), (TSP/03/021), (TSP/03/003), (TSP/02/004), (TSP/02/003-1), (TSP/04/011), (TSP/02/003-2), (TSP/02/002), (TSP/06/036-1), (TSP/07/001), (TSP/03/022)	Set	34	
31	75sqmm Aluminium Conductor Steel Reinforced (ACSR) conductor for length of three phase (3 - wire) line (TSP/06/020-2)	Km	1.88	
32	MV Concrete Pole stays - (Stay wire, stay rod, stay block, shackle insulator)	No	28	
33	MV Concrete Pole flying stays - (Concrete pole, Stay wire, stay rod, stay block, shackle insulator)	No	2	
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, anticlimbing devices and other safety requirements)	Set	2	
B5	Step up Transformer			
37	415V/11KV 100KVA transformer	No	1	

38	All system components for interconnecting the inverters and the 11kV distribution transformers, including but not limited to: panelboards, bus bars, switchgears, air break switch and structure, 11kv solid links, surge diverters, mounting structures for the surge diverters, underground cabling, conduits, cables and cable trays, grounding electrodes, grounding conductors, lightning arrestors, lightning mast galvanized steel structure and associated earthing, insulators, meters, sensors, concrete plinth, circuit breaker complete with its accessories, mounting structures for the HT neutral bushing and any other fixtures required for safety, reliability, and compliance with all relevant local and international codes and standards at the time of installation			Set	1		
		1	VACHUK	ui 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		
		ì	NACHUKI	JI SUBT	TOTAL C		
	TOTAL (to Schedule No. 7. Gra	and Summary)					
			Name of	Bidder			
		Si	gnature of	Bidder			
	<sup>1</sup> Specify currency. Create and use as many colum	ns for Unit Pric	e and Tot	al Price	as there a	re currencies	•
	<sup>2</sup> Bidder to provide further breakdown of items qu well as the size/capacity of a single unit.						
	<sup>3</sup> Lot per km - Bidders are advised to assume a spa Low Voltage network.						
	NB — Refer to Employer's Requirements & Techni Volumes II and IV)	ical Specification	ons for det	ails of e	ach item (	Bidding Doci	uments

	SCHEDULE NO. 3 - SURVEY & DESIGN SERVICES						
	LOT 1 SOLAR PV MINIGRIDS						
Item	Description Unit	Qty	Unit Price 1	Total Price <sup>1</sup>			
			(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 1 SUBTOTAL					
	TOTAL (to Schedule No. 7. Gran	d Summar	y)			
		Name o	of Bidder			
		Signature c	of Bidder			
<sup>1</sup> Spe	<sup>1</sup> 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, CON	MISSI	ONING.	AND OTHER S	ERVICES
Item	Description	Unit	Qty	Unit Price 1	Total Price 1
			(1)	(2)	(1) x (2)
	KAIKOR 175 kWp (175kW AC) SO	OLAR P	V MINI	GRID	
<u> </u>	Solar Power Generation Plant (SPGP)			Г	
1	Installation, Erection, Testing and Commissioning of SPV Modules & Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including Inverter/Charger	Lot	1		
3	Installation, Erection, Testing and Commissioning of SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning of Diesel Generator				
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		
	KAIKOR	SUBTO	TAL 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	612		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	35		
9	PME installation	No	431		
10	LV Stay hole digging, making & Erection	No	487		
11	LV Strut hole digging, making & Erection	No	34		
12	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.	561		
13	Installation of Ready Boards, Earthing and Testing	No.	561		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	561		
15	Class C-2 ERC Wiring Certificates	No	561		
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line				
16	Pole Erection and dressing- Concrete	No	94		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	4.83		
18	MV Stay hole digging, making & Erection	No	21		
19	MV Flying Stay hole digging, making & Erection	No	4		
20	MV Strut hole digging, making & Erection	No	7		

B-4	Mounting, Dressing, Welding and Earthing 11KV Distribution Transformer				
21	Transformer Mounting, Dressing, Welding and Earthing	No	4		
B-5	Mounting, Dressing, Welding and Earthing Step up Transformer				
22	Transformer Mounting, Dressing, Welding and Earthing	No	1		
	KAIKOR	SUBT	OTAL 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		
	KAIKOR SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price 1	Total Price 1		
			(1)	(2)	(1) x (2)		
	KANAKURDIO 75 kWp (75kW AC)	SOLAR	R PV MIN	II 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	Pre-commissioning & 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				
	KANAKURDIO	SUBTOTAL 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	277				
8	Conductor Stringing including trace clearance as per KPLC standard	Km	16				
9	PME installation	No	187				
10	LV Stay hole digging, making & Erection	No	172				
11	LV Strut hole digging, making & Erection	No	34				
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.	226				
13	Installation of Ready Boards, Earthing and Testing	No.	226				
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	226				
15	Class C-2 ERC Wiring Certificates	No	226				
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line						
16	Pole Erection and dressing- Concrete	No	51				
17	Conductor Stringing including trace clearance as per KPLC standard	Km	4.28				
18	MV Stay hole digging, making & Erection	No	37				
19	MV Flying Stay hole digging, making & Erection	No	7				
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	
	Kanakurdio SUBTOTAL 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	
	KANAKURDIO	SUBTO	OTAL C	

Item	Description	Unit	Qty	Unit Price 1	Total Price 1
			(1)	(2)	(1) x (2)
	KIBISH 120 kWp (120kW AC) SC	LAR P	/ MINI C	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	Pre-commissioning & 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		
		SUBTO	TAL 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	165		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	9		
9	PME installation	No	105		
10	LV Stay hole digging, making & Erection	No	103		
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.	225		
13	Installation of Ready Boards, Earthing and Testing	No.	225		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	225		
15	Class C-2 ERC Wiring Certificates	No	225		
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	
		SUBTO	OTAL 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	
	KIBISH	SUBTO	OTAL C	

Item	Description	Unit	Qty	Unit Price 1	Total Price 1
			(1)	(2)	(1) x (2)
	KOKURO 120 kWp (120kW AC) S	OLAR I	PV MINI	GRID	
A	Solar Power Generation Plant (SPGP)			1	
1	Installation, Erection, Testing and Commissioning of SPV	Lot	1		
	Modules হ্য Inverters including Mounting structures Installation, Erection, Testing and Commissioning of				
2	Battery Energy Storage System, including	Lot	1		
_	Inverter/Charger	Lot	•		
7	Installation, Erection, Testing and Commissioning of	1 -4	1		
3	SCADA system	Lot	1		
4	Installation, Erection, Testing and Commissioning Diesel				
Т	Generator				
5	Installation of all balance of system components to	Lot	1		
	complete erection of the SPGP		-		
	Pre-commissioning & commissioning of all supplied equipment including DG. Test running of Solar Power				
6	Plant as well as load trials at site, prior to handover and	Lot	1		
	implementation of maintenance contract				
	KOKURO	SUBTO	TAL 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	137		
	Conductor Stringing including trace clearance as per				
8	KPLC standard	Km	7		
9	PME installation	No	91		
10	LV Stay hole digging, making & Erection	No	96		
11	LV Strut hole digging, making & Erection	No	26		
B-2	Service cable				
1.0	Service cable installation complete with terminations on		0.40		
12	both the pole and angle iron on the wall, pole mounted meter box, Prepaid meter and MCB installation	No.	248		
13	Installation of Ready Boards, Earthing and Testing	No.	248		
	Installation of wall mounted metallic customer meter				
14	boards complete with MCB and service cable termination	No.	248		
15	Class C-2 ERC Wiring Certificates	No	248		
	Pegging, Erection, dressing and stringing of 11KV MV		-		
B-3	Distribution line				
16	Pole Erection and dressing- Concrete	No	27		
17	Conductor Stringing including trace clearance as per KPLC standard	Km	1.82		
18	MV Stay hole digging, making & Erection	No	13		
19	MV Flying Stay hole digging, making & Erection	No	3		
20	MV Strut hole digging, making & Erection	No	3		
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	
	KOKURO	SUBT	OTAL 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	
	KOKURO	SUBTO	OTAL C	

Item	Description	Unit	Qty	Unit Price 1	Total Price 1
			(1)	(2)	(1) x (2)
	OROPOI 100 kWp (100 kW AC) S	OLAR I	INIM V	GRID	
_ A	Solar Power Generation Plant (SPGP)		Т		
1	Installation, Erection, Testing and Commissioning of SPV Modules প্ৰ Inverters including Mounting structures	Lot	1		
2	Installation, Erection, Testing and Commissioning of Battery Energy Storage System, including	Lot	1		
3	Inverter/Charger 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	Pre-commissioning & 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		
	OROPOI	SUBTO	TAL 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	182		
8	Conductor Stringing including trace clearance as per KPLC standard	Km	9		
9	PME installation	No	125		
10	LV Stay hole digging, making & Erection	No	125		
11	LV Strut hole digging, making & Erection	No	12		
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.	247		
13	Installation of Ready Boards, Earthing and Testing	No.	247		
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	247		
15	Class C-2 ERC Wiring Certificates	No	247		
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		
	OROPO	SUBTO	OTAL 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		
	OROPOI SUBTOTAL C				

Item	Description	Unit	Qty	Unit Price 1	Total Price 1		
			(1)	(2)	(1) x (2)		
	NACHUKUI 120 kWp (120kW AC) S	OLAR PV	MINI GR	ID			
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	Pre-commissioning & 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				
	*	KUI SUBTOTAL 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	177				
8	Conductor Stringing including trace clearance as per KPLC standard	Km	13				
9	PME installation	No	158				
10	LV Stay hole digging, making & Erection	No	158				
11	LV Strut hole digging, making & Erection	No	17				
12	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.	213				
13	Installation of Ready Boards, Earthing and Testing	No.	213				
14	Installation of wall mounted metallic customer meter boards complete with MCB and service cable termination	No.	213				
15	Class C-2 ERC Wiring Certificates	No					
B-3	Pegging, Erection, dressing and stringing of 11KV MV Distribution line						
16	Pole Erection and dressing- Concrete	No	34				
17	Conductor Stringing including trace clearance as per KPLC standard	Km	1.88				
18	MV Stay hole digging, making & Erection	No	28				
19	MV Flying Stay hole digging, making & Erection	No	2				
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		
	NACHU	<b>IKUI</b> SUBTO	OTAL 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		
	NACHU	<b>ikui</b> subto	OTAL C		
D	Others				
32	Cost allocation for end-of-life (EOL) plan for all batteries and other potentially hazardous e-waste at the end of its useful life	Lot	1		
33	Offices facilities: Provide a furnished site office complete with communication facilities (Laptop, internet, printer and stationery)	Site	6		
34	Provision of communication facilities for the employer	Lot	1		
35	Provision of Transport: Provide fuel and maintain with driver transport for exclusive use of the REREC project engineer for project supervision and coordination services (1 No. 4X4)	Vehicle/ Months	12		
36	Factory Acceptance Tests for Major Items	Lumpsum	1		
37	Provisional sum for Community Project for compensation in kind for land acquisition (The project to be decided after land value is determined)	Fixed amount	6	KSh. 1,000,0 00	KSh. 6,000,000
	•	T 1 SUBTO	OTAL D		
	TOTAL (To Schedule No. 7. Grand	Summary)		<u>'</u>	

Name of Bidder
Signature of Bidder

<sup>&</sup>lt;sup>1</sup> Specify currency in accordance with ITB 18. Create and use as many columns for Unit Price and Total Price as there are currencies.

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

	SCHEDULE NO. 5 - ENVIRONMENTAL,	SOCIAL	, HEALT	H AND SA	FETY (ESHS	S) SERVICE	S	
	·		Qty	Unit	Price <sup>1</sup>	Total Price <sup>1</sup>		
Item	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 oth		ng infrasti	ucture				
11	Provide traffic marshals and signages	Lot	6					
	Occupational safety and Health risks							
12	Awareness creation and training of staff on occupation health and safety issues	Lot	6					

13	Provide appropriate PPEs including Helmets, Safety Boots, Overalls, Dust Coats, Ear Muffs, Safety Harness, Gloves, Safety Glasses, etc	Lot	6					
14	Provide fully stocked first aid kit	Lot	6					
15	Provide insurance to the workers as per Work Injury and Benefits Act (WIBA) requirements	Lot	6					
16	Proper barricading and hazard communication and signage	Lot	6					
	Training and Sensitization on Labour influx relexploitation and sexual harassment, HIV/AIDs					and		
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 work	ers and lo	ocals					
20	Install hand washing facilities with adequate running water and soap	Lot	6					
21	Use thermal guns for everyone entering the site for monitoring temperatures levels	Lot	6					
	Stakeholder Engagement							
22	Conduct stakeholder engagement forums in a culturally appropriate manner	Lot	6					
23	Conduct separate adequate public consultation for the VMGs where applicable	Lot	6					
	TOTAL	L (To Sch	nedule N	o. 7. Grand Summa	ary)			
				Name of Bidder				
		Signature of Bidde	er					
	<sup>1</sup> Specify currency in accordance with ITB 18. Price as there are currencies.							
	NB — For details of each item, refer to the Environmental, Social, Health and Safety Management Plan for proposed solar mini-grid for community facilities, enterprises, and households - Component 1 of the Kenya Off-grid Solar Access Project (Bidding Document Volume I)							

	SCHEDULE NO. 6 - OPERATION & MAINTENANCE									
Item	Description	Unit	Qty	% of O&M Contract Price	Unit Price <sup>1</sup> Local Currency Portion	Foreign Currency Portion (optional)	Total Price <sup>1</sup>			
	KAIKOR 175 kWp (175kW AC) SOLAR PV MINI GRID									
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5						
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5						
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5						
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5						
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18						
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18						
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18						
				TOTAL A						
	KANAKURDIO 75 kWp (75kW AC) SOLAR I	PV MIN	NI GRI	D	I					
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						
			SUI	STOTAL B						

	KIBISH 120 kWp (120kW AC) SOLAR PV MII	VI GRII	)			
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		
		l	SUB	TOTAL C		
	KOKURO 120 kWp (120kW AC) SOLAR PV	MINI G	RID			
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		
		<u> </u>	SUB	TOTAL D		
	OROPOI 100 kWp (100kW AC) SOLAR PV M	1INI GF	RID		•	
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		
			SUI	BTOTAL E		1

	NACHUKUI 120 kWp (120kW AC) SOLAR P	V MINI	GRID				
1	Operation and Maintenance of the Distribution Network and Plant Facility for FIRST YEAR	Year	1	11.5			
2	Operation and Maintenance of the Distribution Network and Plant Facility for SECOND YEAR	Year	1	11.5			
3	Operation and Maintenance of the Distribution Network and Plant Facility for THIRD YEAR	Year	1	11.5			
4	Operation and Maintenance of the Distribution Network and Plant Facility for FOURTH YEAR	Year	1	11.5			
5	Operation and Maintenance of the Distribution Network and Plant Facility for FIFTH YEAR	Year	1	18			
6	Operation and Maintenance of the Distribution Network and Plant Facility for SIXTH YEAR	Year	1	18			
7	Operation and Maintenance of the Distribution Network and Plant Facility for SEVENTH YEAR	Year	1	18			
			SUI	STOTAL F			
	TOTAL (to Schedule No. 7. Grand Summary)						
		Name	of Bia	lder			
	Signature of Bidder						
	'Specify currency in accordance with specifications in Bid Data Sheet under ITB 18.1						

I4a	December 41 cm	Total Price <sup>1</sup>			
ltem	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				
3	Total Price of Schedule No 3: Survey & Design Services				
4	Total Price of Schedule No 4: Installation, Testing, Commissioning, and Other Services				
5	Total Price of Schedule No 5 : Environmental, Social, Health And Safety (ESHS) Services				
	Phase 2 - Operations and Maintenance				
6	Total Price of Schedule No 6 : Operation & Maintenance				
	TOTAL (to Letter of Bid)				
		Name of Bidder			
		Signature of Bidder			

SCHEDI	JLE NO. 8 - RECOMMENDED SPARE PARTS (NO FOR INFOR			DERED FOR EV	/ALUATIC	ON, BUT ONLY		
Item	Description		Qty	Unit Price <sup>1</sup>	Total Price <sup>1</sup>			
		Unit		CIF or CIP	EXW (local parts)	(1) x (2) or (3)		
				(foreign parts)				
			(1)	(2)	(3)			
		Name of Bidder						
		Signature of Bidder						
	<sup>1</sup> Specify currency. Create and use as many columns for Unit Price and Total Price as there are currencies.							