Technical Specification for Solar Panel

SL No.	Description	Required Parameters
1	Module efficiency	>=17%,>=19%
2	Input Phase	Single
3	Warranty of PCU(M)	60
4	Module Product warranty (A)	25
5	Charger technology	MPPT(Maximium Power Point Tracker)
6	Capacity of power plant (KW)	5
7	Efficiency at STP for liner loading	>=95%

Module Mounting Structure

SL No.	Description	Required Parameters
1	Weather proof Junction boxprovided for connections	Yes
2	Module tilt angle	22 degree
3	Type	Galvanised module mounting structures(MMS)
4	Mounting structure wind withstand ability	>=200 km/hr
5	Adjacent Module air gap	25 millimeter
6	Material of allnuts, bolts &factners etc	Stainless steel
7	Thickness(micron)	>=80

PV Module(Photo Voltaic Module)

SL No.	Description	Required Parameters
1	Module glass air withstand capacity(km/hrs)	>=200km/hr
2	Module linear power output degraddation warranty	25 year
3	Zero negative power tolerance	Yes
4	Marking on PV module	Name of manufacturer,month &year of manufacturing,I-Vcurve of module,Peak Power,Im,Vm,Fillfactor,Serial no.,Model number,Name of Labissuing IEC,date & year of obtaining IEC PV module qualification
5	Module conformity to specification	IEC 61215 Ed2,IEC61701,IEC 61730 -1,IEC61730-2
6	Type of Solar Module	Polycrystalline
7	voltage	42.35 Volt
8	Module eficiency	>=19%
9	Additional features	PID Resistance Technology,Multi-Layer EVA Encapsulation
10	Juction box Protection class	IP67
11	Rated power of each PV module used	335W
12	Module product warranty	25 year
13	Module frame material	anodised aluminium alloy frame

Power Conditioning Unit (PCU)

SL No.	Description	Required Parameters
1	Rated Frequency	50 Hertz

		MPPT(Maximium Power Point Tracker)
2	Charger technology	5
3	Rated Power(kVA)	>=95%
4	Enciency at STP for linear loading	Single
5	Input Phase	IGBT
6	Switching device	IP21
7	Protection class	IEC 61683,IEC 60068,IEC60529
8	Conformity to specification	50 degree Celsius
9	Maximum operating ambient temperature	Boost,Absorption,Float
10	Charging stages	Array voltage,Arraycurrent,Arraypower,Battery voltage,Battery current,Grid Voltage,Output. DaykWh,Date,Time
11	Display parameter	>=0.8
12	Power factorfor lead	
13	Automatic changeover between solar & AC mains provided	Yes
14	Output waveform type	Pure Sine Wave
15	Controller	32 bit DSP controller
16	Electrical protections	Under/over voltageprotection at input &output of battery,Reverse polarity protection forarray & battery,Output overloadprotection,Short circuitprotection,Overtemperatureprotection,Surgeprotection
17	Power factorfor lag	>=0.8
18	Rated Output Voltage (AC)	230 Volt
19	Nominal battery DC system voltage	12 Volt
20	Warranty of PCU	60 month
21	Output phase	Single
BOS items		
1	Earthing & Lighting protection as per	IEC- 62561-7
2	Protection class of Junctionbox/enclosure box	IP 55,IP 65
3	PVC insulated cable for working voltage and UV protected forouter installationas per	TUV,IEC 60228,IS 694,IS1554
4	Switches/Circuitbreaker/connectorwith SPD as per	IEC 529,SPD as per IEC61643-11/12,IEC60947,IS 60947
Generic		
1	capacity of powerplant (kVA)	5
2	Component	Balance of System (BOS)Items/Components,Module Mounting Structure,BatteryRack/Trolley,Electrical Connections,DC MCB/DC Distribution Box,AC DISTRIBUTION BOARD(ACDB),Earthing & Lightning Protection
3	Additional features to be specified	LMLA BATTERY,CIVIL

Certifications and Standards

1	Manufacturer should be ISO certified	Yes
2	ISO certification number and date	ISO 45001: 2018
3	Copies of reports and certifications to be furnished to buyer on demand at time of supplies	Yes

Battery specifications

1	Terminal coverprovided	Yes
2	Battery warranty	5 year
3	No of battery	8
4	Battery type	C 10 Tubular Lead Acid
5	Batterycapacity (Ah)	150
6	Battery voltage	12 Volt
7	Carrying handle	Yes
8	Acid levelindicatorprovided	Yes
9	Suitable batterystand/size withroller provided	Yes

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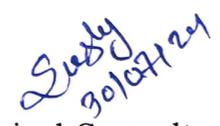
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Phulbani, Kandhamal

Principal
ITI, Phulbani

DEO-cum-DPC.
Samagra Shiksha, Kandhamal

Additional District Magistrate
Kandhamal